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VOLUME 127, NO. 7

AUGUST 12, 194

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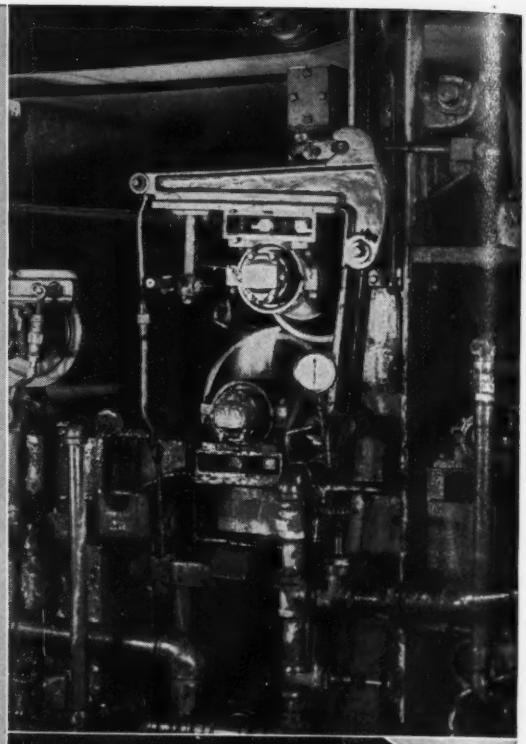

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CALENDAR OF COMING EVENTS

ASSOCIATION EXECUTIVES: Please send us your meeting dates and locations for this column as far in advance as possible. No charge for publication.

SEPTEMBER 8-10: Technical Section, Canadian Association. Hotel Vancouver, Vancouver, B. C., not Harrison Hot Springs, as previously announced.

SEPTEMBER 17-20: Fall Meeting, National Ass'n. of Waste Material Dealers. Grand Hotel, Mackinac Island, Mich. For details, write to Clinton M. White, secretary, NAWMD, 1109 Times building, New York 18, N. Y.

SEPTEMBER 27-29: TAPPI Mechanical Pulping Conference (Joint meeting with CPPA Technical Section) Poland Springs House, Poland Springs, Maine.

OCTOBER 11-14: TAPPI Testing Methods Conference at Mellon Institute, Pittsburgh, Pa. Headquarters, William Penn Hotel.

OCTOBER 25-28: Third Engineering Conference of the Pulp and Paper Industry Statler Hotel and Westinghouse Electric Co., Auditorium, Buffalo, N. Y.

OCTOBER 29: Joint Luncheon, Salesmen's Ass'n., of the Paper Industry, and Paper & Twine Ass'n. Hotel Stevens, Chicago. For details write to (Salesmen's Ass'n.) E. G. Amos, secretary-treasurer, 122 East Forty-Second street, New York 17, N. Y. (Paper & Twine Ass'n.) John L. Richey, Hotel Sinton, Cincinnati, Ohio.

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Paper TRADE JOURNAL

VOL. 127, NO. 7 REG. U.S. PAT. OFF. AUGUST 12, 1948

World Production of Newsprint Paper—1947

By J. J. ZIMA

Statistician, Newsprint Service Bureau

In cooperation with the Forest Products Branch, O.I.T., United States Department of Commerce

(Based on reports from Foreign Service officers throughout the world)

World output of newsprint paper in 1947 amounted to approximately 7,650,000 tons and was nearly 570,000 tons greater than in 1946. Also, with the exception of 1937 and 1936, it exceeded that of any other year on record. This statement is based on the results of the second post-war survey of the world newsprint situation undertaken by the Newsprint Service Bureau in cooperation with the Forest Products Branch, O. I. T., United States Department of Commerce.

The process of collecting all available world newsprint data has been a rather lengthy one and coverage is not quite as complete as could be desired due to the refusal of certain countries —which have characterized this type of research as "economic espionage"—to furnish the necessary data. Also, the dearth of information concerning Russia is as great as ever.

Table I summarizes the newsprint production and consumption position in the United States compared with that of the rest of the world in the two preceding years and in 1939.

From these figures it is seen that the United States in 1947 produced 11 percent of the world total while consuming 62 percent of available world supply. Whereas prior to the war, United States newsprint consumption was below that of the rest of the world combined, this country's usage last year exceeded that of all others by about 1,850,000 tons. It should be remembered, however, that consumption in certain other countries was not as great as it would have been were it not for government imposed restrictions — due largely to monetary difficulties—on the use of newsprint. Of the increase in world supply in 1947 compared with 1946, nearly 460,000 tons or 80 percent went into United States consumption with the balance of 110,000 tons available to users elsewhere throughout the world.

Production

Table II lists production of newsprint paper in 1947 by the various countries. As was the case last year, there is again no information regarding Russia and the Soviet Zone in Germany since requests for these data have been refused. The only official figures reported—expressed only as percentages —indicate that output of paper in 1947 was 25 percent greater than in 1946. Last year it had been estimated, on the basis of the best general information then available, that perhaps 200,000 tons of newsprint had been produced in these areas in 1946. By applying the reported 25 percent increase in overall output of paper to this figure we arrive at a total of 250,000 tons. Admittedly, this figure represents a good deal of guesswork, but under the circumstances this is unavoidable.

World production of newsprint in 1947 was eight percent greater than in 1946 and also exceeded that of 1939 by approximately one percent. North American producers accounted for nearly 370,000 tons or 65 percent of the increase, while output elsewhere throughout the world was 200,000 tons greater than in 1946. Comparing 1947 with 1939, we find that production on this continent was about 1,530,000 tons greater than in the earlier year, while there was a decline of 1,480,000 tons in the quantity turned out elsewhere.

All producing countries, with the exception of the United Kingdom and Germany (exclusive of the Soviet Zone), reported output equal to or greater than in 1946. Canada's contribution to the increase amounted to 304,000 tons while that of the United States was 55,000 tons and that of Newfoundland 10,000 tons. Of the European producers of newsprint paper the largest quantitative increase—70,000 tons—was recorded by France followed by Finland with an increase of 38,000 tons and Belgium with 15,000 tons. There also were increases of 13,000 tons in Austria and 12,000 tons in Sweden. Output in Japan was 16,000 tons or about 20 percent greater than in 1946. Production in Brazil, where a new mill came into operation in April of 1947, was double that of the preceding year. The United Kingdom in 1947 turned out 42,000 tons less than in 1946 with production last year equivalent to only one-third of the tonnage made in 1939.

Canada, as has been the case since 1926 when it superseded the United States, continues to be the world's greatest manufacturer of newsprint with output more than five times larger than that of the next largest producer and amounting to 58 percent of the

(Continued on page 24)

TABLE I

World Newsprint Production—Consumption 1947—1946—1939

(Thousand Short Tons)

							% Change 1947 vs	
Production	1947	%	1946	%	1939	%	1946	1939
United States	826	11	771	11	939	12	+ 7	—12
Rest of World	6,827	89	6,313	89	6,663	88	+ 8	+ 2
World Total	7,653	100	7,084	100	7,602	100	+ 8	+ 1
Consumption								
United States	4,753	62	4,296	61	3,546	47	+11	+34
Rest of World	2,900	38	2,788	39	4,056	53	+ 4	—29
World Total	7,653	100	7,084	100	7,602	100	+ 8	+ 1

TREE FARM DEDICATION: P. H. Glatfelter (second from left) president of the Glatfelter Pulpwood Co., of Spring Grove, Pa., is presented by Maryland's Governor Wm. Preston Lane, Jr., (left) with that State's first Tree Farm Certificate. At right of Mr. Glatfelter in picture are Congressman Lansdale G. Sasscer of Maryland, and State Senator James B. Monroe.

Twenty-First Tree Farm State

IRONSIDE, Md. — Maryland became the twenty-first state to join the "American Tree Farm" movement with the dedication on July 30 of a 1,278-acre tract of forest land in Charles County owned by the Glatfelter Pulpwood Co. of Spring Grove, Pa.

"I hope this is the first of many Maryland tree farms," declared Governor William Preston Lane, Jr., as he presented the gold seal Tree Farm Certificate to P. H. Glatfelter, company president.

The dedication ceremonies, attended by state officials and farm owners, were held on the grounds of historic Old Durham Church, beneath a 300-year-old white oak, the Maryland state tree.

Dedication of their Southern Maryland forest property brought to three the number of states in which the Glatfelter Pulpwood Co. operates certified tree farms. In October 1947 the company became the first Pennsylvania tree farm owner, when a 600-acre woodland tract at Iron Springs was certified, and during July of this year the company had a 524-acre tract at Hanover, Va., certified as a tree farm.

Governor Lane complimented the County Forestry Boards, joint sponsors with the Department of State Forests and Parks, of Maryland "Tree Farms," for their excellent work during the five years of their existence. "Our greatest job now," the Governor said, "is to show land-owners that forestry pays."

Rep. Lansdale G. Sasscer (Md.) stressed the importance of timber as a crop and congratulated the Glatfelter Pulpwood Co. for its forward-looking forest management policies.

Other speakers included: James B. Monroe, State Senator from Charles County; James Mitchell, editor of the LaPlata *Times-Crescent;* and the Rev. R. B. Stevenson, rector of Old Durham Church.

According to Joseph F. Kaylor, director of the State Department of Forests and Parks, the "Tree Farm" program is part of a plan to increase and perhaps ultimately double Maryland's annual nine-million dollar income from forest products. More than 2,700,000 acres of Maryland land is best suited for the growing of trees, Mr. Kaylor said.

Besides opening the way for increased farm income through better production and management of woodlots, the Maryland Tree Farm program is of importance to the 14,000 Marylanders regularly employed in forest industries, Kaylor said.

The American Tree Farm movement, started in the State of Washington in 1941, today includes more than 15 million acres of woodland. Assisting in the project is the American Forest Products Industries, Inc., Washington, D.C., representing lumber, plywood, and pulp and paper companies interested in encouraging better forest practices and woodland protection.

AN INVITATION

to

Technical Writers

Paper Trade Journal, in the Industrial Development Section, makes space available for discussion of administrative and operating problems. Space is also available for presentation of independent studies and research on technical and engineering subjects. Feature stories of paper mills, converting plants and interrelated industries will also be included.

An invitation is cordially extended to all who are qualified to discuss these subjects.

Original manuscripts submitted exclusively to Paper Trade Journal and found suitable for use in this section will be paid for immediately upon acceptance. Submit manuscripts to E. P. McGinn, Industrial Editor.

Virginia Tree Farm System

Virginia increased its tree farm acreage to 186,183 during July when 144,434 acres were certified at three "Forestry Look-See" meetings held under the sponsorship of Virginia Forests, Inc.

The first demonstration was held July 27 in the Bigwoods Experimental Forest in cooperation with the Southeastern Forest Experiment Station, and the Camp Mfg. Co., Inc. Tree farms certified were: L. L. Thorpe, Newsons, Va., 356 acres; A. W. Showalter, Tabb, 20 acres; Rudolph Wachmann, Stoney Creek, 1,550; Camp Mfg. Co., Inc., Franklyn, 129,000; Clinton L. Williams, Quinton, 1,725; and Ellis Olsson, West Point, 999.

On July 28 at Lee Experimental Forest the meeting was sponsored by Virginia Forests, Inc., and Buckingham Ruritan Club, in cooperation with the Southeastern Forest Experiment Station and Burress Land & Lumber Co. Tree farms certified were: J. P. Taylor, Orange, 5,760 acres; J. T. Burton, Scottsburg, 78; Martin Brothers, Lignum, 400, all of Virginia, and Glatfelter Pulpwood Co., LaPlatta, Md., 524.

The third meeting was sponsored by Virginia Forests, Inc., and the West Virginia Pulp & Paper Co., on July 29 at which 4,022 acres of the latter named company were added to the Virginia tree farm system.

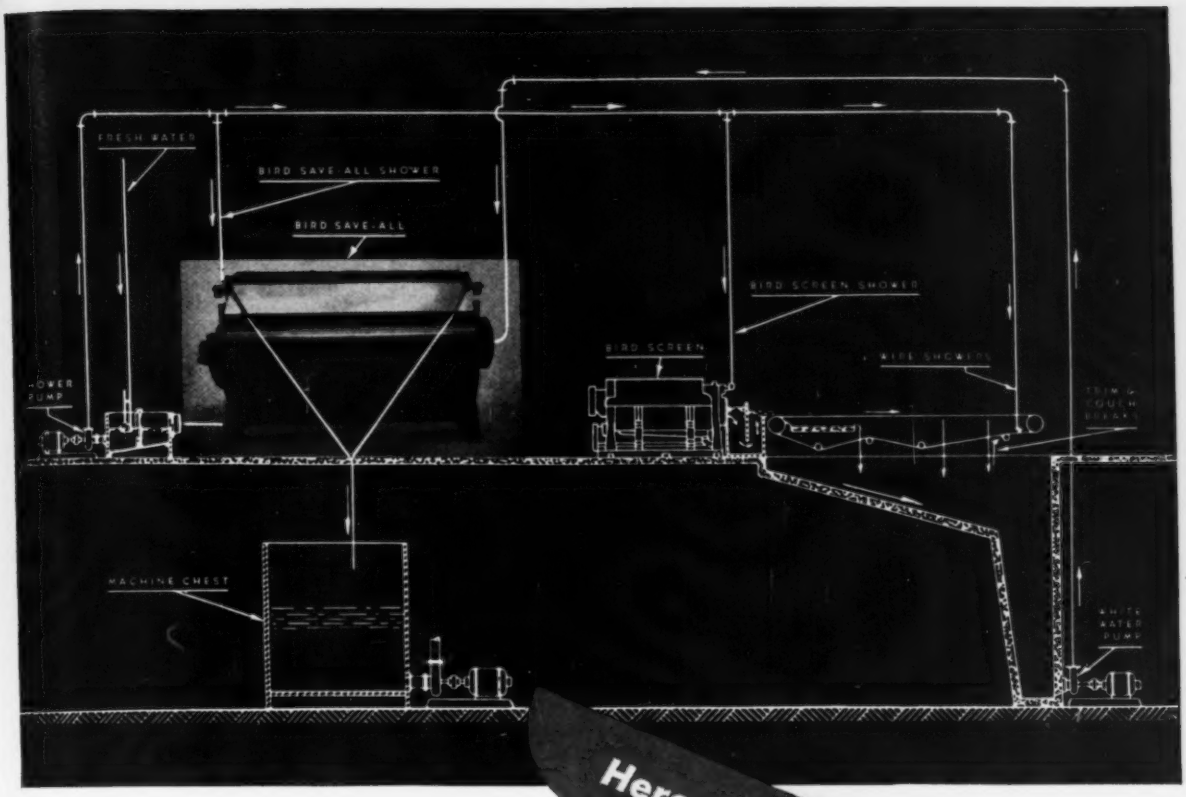
Dry Casein Output Down

WASHINGTON — Dry casein production for June was 2,025,000 pounds, 55 percent under the June, 1947, output, the Agriculture Department stated on August 4. Manufacturers' stocks on June 30 were 3,450,000 pounds, 600,000 pounds increase during the month, and 500,000 above the June, 1947, holdings.

Sitka Survey Under Way

SITKA, Alaska — Final survey is under way for a pulp mill at Sawmill Creek, six miles from here.

Roy Johnson of Seattle and Ketchikan, vice-president of the Alaska Industrial Corp., estimates the plant will be in operation by the end of 1950 with a daily capacity of 200 to 250 tons.



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The BIRD SAVE-ALL

Murray, Brown, Praise and Defend Industry

WASHINGTON—The nation's pulp and paper industry was praised and defended in the House on August 4 by members of Congress, following an earlier attack by Rep. John McCormack, of Massachusetts, in which that member alleged that the industry had made undue profits in the present situation.

Taking note of the Massachusetts member's attack, Rep. Reid F. Murray, of Wisconsin, said that singling out the paper and pulp industry in this connection "was wholly unwarranted."

"The profits of the paper and pulp companies have not been anywhere near as high as the profits of many other companies," he said, "so why single this industry out for criticism?

"The profits of the paper and pulp companies were very small for many years and in some years, losses have been experienced."

Business reports, he continued, show these profits, so that the facts are easily ascertained.

Declaring the paper and pulp industry to be "one of the most important in our nation," Rep. Murray recalled that it "has had a most excellent labor-management relationship in our district."

Citing the fact that four times as much newsprint is imported each year as is produced in the United States, Mr. Murray asked the House just how it was proposed to lower profits of producers in other countries.

Newsprint, he said, represents only about a five percent of the total paper and paperboard production of the United States, over 80 percent of newsprint being imported.

"All prices are high," the Congressman pointed out. "This also includes the cost of government. So long as over 80 percent of the newsprint used in this country is imported, something else will have to be proposed besides talk about the American pulp and paper industry.

"The paper and pulp people made a great contribution to the war effort. They are entitled to the same legislative consideration given other industries. Is it fair to put an economic straight-jacket on one industry, like the paper and pulp industry, and not apply the same formula to the rest of the corporations of the country?

"Commercial uses of paper and pulp have been greatly expanded. New uses, such as cartons and paper boxes replacing wood, have increased the volume of the business in this industry; use of by-products of the industry constantly is being expanded. This is one of the large industries of the nation."

Joining in the debate, Rep. Clarence Brown, of Ohio, chairman of the House Committee on Newsprint and Paper Supply, said "While it is my opinion that the manufacturers of newsprint and paper at the present time are in a profitable business, and are making a profit which compares with the profits made by other corporations, the truth is that for many, many years the manufacturers of newsprint and of other papers not only in the United States but in Canada as well, operated without profit, and at great loss to many of those concerns.

"A great many of them went through bankruptcy and liquidation," Rep. Brown continued. "The average price over the years has been fair, to say the least."

Rep. Brown said that Mr. McCormack, of Massachusetts, "evidently has not spent as much time as he usually does in checking his figures and facts." Otherwise, he pointed out, Mr. McCormack would have discovered that the period "from 1933 to 1939," was the "most difficult period in the entire history of the newsprint and paper manufacturing business."

"The real reason why newsprint prices went up," said Mr. Brown, "was because of the war and a reduction in production, not only in Canada, but a complete reduction in all sorts of newsprint in Europe."

"I would also like to say, in behalf of our Canadian friends, that while American publishers are able to purchase their newsprint supplies at from $96 to $100 a ton f.o.b. New York, the world market price is approximately $200 a ton," said Rep. Brown.

"Much of this production could be diverted and sold in the world market instead of being shipped to the United States, and I think the Congress of the United States and the publishers of the country should be appreciative of the fair treatment we have received from our friends to the north, the Canadians."

Canadian Plant Roster Grows

TORONTO, Ont. — Among the many news items in the construction industry indicating the rapid expansion of Canadian industry are to be found this week the following items relating to the share paper and paper products firms have in this expansion:

Abitibi Power & Paper Co., according to D. W. Ambridge, president and general manager, starts major building and equipment program at Iroquois Falls, Ont., to virtually replace groundwood mill.

Great Lakes Paper Co., according to the Hon. W. Earl Rowe, president, is starting a $500,000 extension to its Fort William sulphite pulp plant.

Dixie Cup (Canada) Toronto, according to Thomas D. Currie, general manager, is considering the possible early building of a new plant at Brampton, Ont., 25 miles northwest of Toronto. Final decision will be made soon after receipt of contractors' tenders late this month. The new plant is to be a one-story steel and brick building comprising 67,000 square feet of floor space.

Appleford Paper Products, Hamilton, Ont., a subsidiary of the Kalamazoo Vegetable Parchment Co., has the foundation in for a one-story, 66,000 square feet, $500,000 first unit steel and brick plant on a seven-acre Parkdale avenue sit bought in 1946, George F. Clark, president, reports. The company will eventually move from itc present location on Stirton street. The first unit is expected to be finished in about six months. The company plans to add to its waxed paper lines new products to be announced later.

Superior Box Co., Waterloo, Ont., has the foundation in for a 12,000 square feet two- and three-story steel and brick addition and alterations. A new boiler plant will have an 80-foot brick stack.

Technologists Placement Service

STAMFORD, Conn. — The Scientists' and Engineers' Ass'n., Rock Rimmon Road, recently organized as a non-profit corporation, has as a major purpose encouragement of the most efficient use of scientific and engineering knowledge and experience.

As a practical means of helping scientists and engineers to use, further develop and be paid for their highest capabilities, the Association has organized a service which specializes in placing such persons in employment connections throughout the United States.

To encourage cooperative effort, the Association provides financial awards for productive information relative to positions open in the above fields, and relative to scientists or engineers who are open for new employment.

Executive secretary of the Association is A. D. Halliwell, formerly vice-president and sales manager of the Elliott Service Co., of New York, and formerly personnel director of Machlett Laboratories of this city.

Services of the Association are open to scientists and engineers in the above fields, through the United States, and to employers everywhere.

Fire Prevention Cancellation Dies

Cancellation with special dies carrying a forest fire prevention slogan of postage stamps on letters and postcards going out from 38 major cities will begin shortly through special arrangement with the United States Post Office Department, Lyle F. Watts, Chief of the Forest Service in the U. S. Department of Agriculture, said today.

Use of the fire prevention dies is scheduled to continue until the close of the fire season around October 30.

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Mead Rebuilding No. 7 Machine

CHILLICOTHE, Ohio—The No. 7 machine in the Mead Corp. plant was shut down on August 2 for complete rebuilding. After the wash-up crew had finished, James Lungo's crew of construction workers started work that will make No. 7 one of the most modern and efficient machines in the local plant. The new machine, when completely rebuilt, will be extended southward almost to the Old Paper Plant and northward into the Finishing room and will measure 263 feet in length—43 feet longer than the old machine.

Most of the wet-end equipment is being shipped to our southern mills, the Fourdrinier going to the Sylva, N. C., plant and the screens and flow-box to Lynchburg, Va. Most of the remaining parts of the machine with the exception of the dryers are scheduled to be scrapped.

The new 158-inch Fourdrinier will be constructed so as to accommodate a wire six inches wider than the one previously used on this machine. A new 500 H. P., single-motor, lineshaft drive similar to that on No. 6 machine, will be installed to operate the new machine. Equipment for major installations is being furnished by the Beloit Iron Works of Beloit, Wis.

Ten of the old 48-inch diameter dryers will be retained on the new machine for use as felt dryers. New dryers in the two main sections will be 60 inches in diameter but will remain the same in width—150 inches. There are to be 28 dryers in the first section and 12 in the second as compared with 16 in the first and 11 in the second on the old machine.

A new color press, similar to that recently placed on No. 9 machine during the July 4 shutdown, will be installed on the new No. 7 but will not be placed in immediate operation when the rebuilt machine is again put into production.

Only the two calender stacks and the winder of the old machine will be the major units to be used for the new machine.

To accommodate the increase in speed and size of the new machine, all accessories such as pumps, agitators, saveall system, ventilation and piping, will be revised and enlarged to take care of the greater flow of stock, chemicals, water, etc.

The ventilating system for the machine itself as well as the auxiliary ventilation for the machine room will be enlarged to take care of the machine's greater capacity.

It is expected that the work of rebuilding No. 7 will take approximately 12 weeks.

Aerial Photo Course

ANN ARBOR, Mich.—For the second consecutive year, the School of Forestry and Conservation of the University of Michigan is sponsoring an intensive short course in the "Use of Aerial Photos in the Management of Forest Properties." The course will be held at the University's Camp at Golden Lake, during the week of September 6, under the direction of instructors from the regular University staff, and will be open to a maximum of 20 students. No time will be spent on difficult theory or mathematics. Photos used will be those which will permit carrying out practice in the necessary field checks. Students will be encouraged to bring a few pairs of their own photos in order to get a start on any desired local problem and to see whether their territory offers unusual or special problems not covered in the general instruction.

Import Duties Settled

NEW YORK—Several problems involving new classifications of paper to conform to the Geneva trade agreements have been decided according to Warren B. Bullock, manager of the Import Committee of the American Paper Industry.

Paper bags with specially designed surface has been held to be dutiable as manufactures of paper with a surface design at five cents per pound and ten percent, not as manufactures of paper at 35 percent, the rate for plain paper bags.

Wood veneer covered paper, claimed to be dutiable at seven and one-half percent as uncolored hanging paper, classified for duty at ten percent as wood veneer.

Toilet paper in rolls, claimed to be dutiable at 35 percent as manufacturers of paper, to be dutiable at this rate, but not less than the rate for the basic tissue paper or creped caper, depending on the character of the material. This ruling involves a higher duty rate than claimed by the importers on the material shipped thus far.

Napkins, doilies, serviettes, etc., have been classified for duty as manufactures of paper at 35 percent, and not at the rate of 15 percent provided for paper cut into shape. If the napkins were in tissue paper weights they would be dutiable at the higher rates for tissue paper.

Charcoal drawing paper of sulphite base, claimed to be dutiable as printing paper, has been held dutiable at the drawing paper rate.

Am. Viscose Ketchikan Factor

WASHINGTON — American Viscose Corp. is a major stockholder in the Ketchikan Pulp & Paper Co. which on August 2 was the successful bidder for eight billion feet of timber in Tongass National Forest of southeastern Alaska.

The Ketchikan Pulp & Paper Co. was organized early in 1948 to carry on exploration into the possibilities of utilizing the forest resources of Alaska, which were initiated in 1946 by Puget Sound Pulp & Timber Co. American Viscose Corporation, large consumer of high alpha pulp, is associated with Puget Sound Pulp & Timber Co. in ownership of the common stock of the Ketchikan Company. Officers and directors of Ketchikan Pulp & Paper Co. include Fred G. Stevenot, chairman of the board; Lawson P. Turcotte, president; and Robert H. Evans, vice-president and counsel. Complete personnel of the board will be announced later. Mr. Stevenot is president of the Puget Sound Pulp & Timber Co.; Mr. Turcotte is executive vice-president; and Mr. Evans is director and counsel of that company.

The Ketchikan company hopes to commence construction of its plant in the summer of 1949.

Carew Co. Reported Purchased

HOLYOKE, Mass. — An unidentified Worcester man, said to head interests that recently acquired the Worthy Paper Co., in Agawam, was reported on Aug. 6 to be the purchaser of the Carew Mfg. Co. paper mill in South Hadley Falls.

Negotiations for the sale of the Carew Co. were begun at the end of July, and since that time the South Hadley paper mill has been idle.

The Worthy Paper Co. was sold in March of this year, but the makeup of the new management was not disclosed at that time, nor has it been made public since then.

100 Pulpwood Cars Building

BOSTON—A $625,000 order for 100 fifty-ton steel side-discharge pulpwood cars has been placed by the Bangor & Aroostook R. R., with the Magor Car Corp.

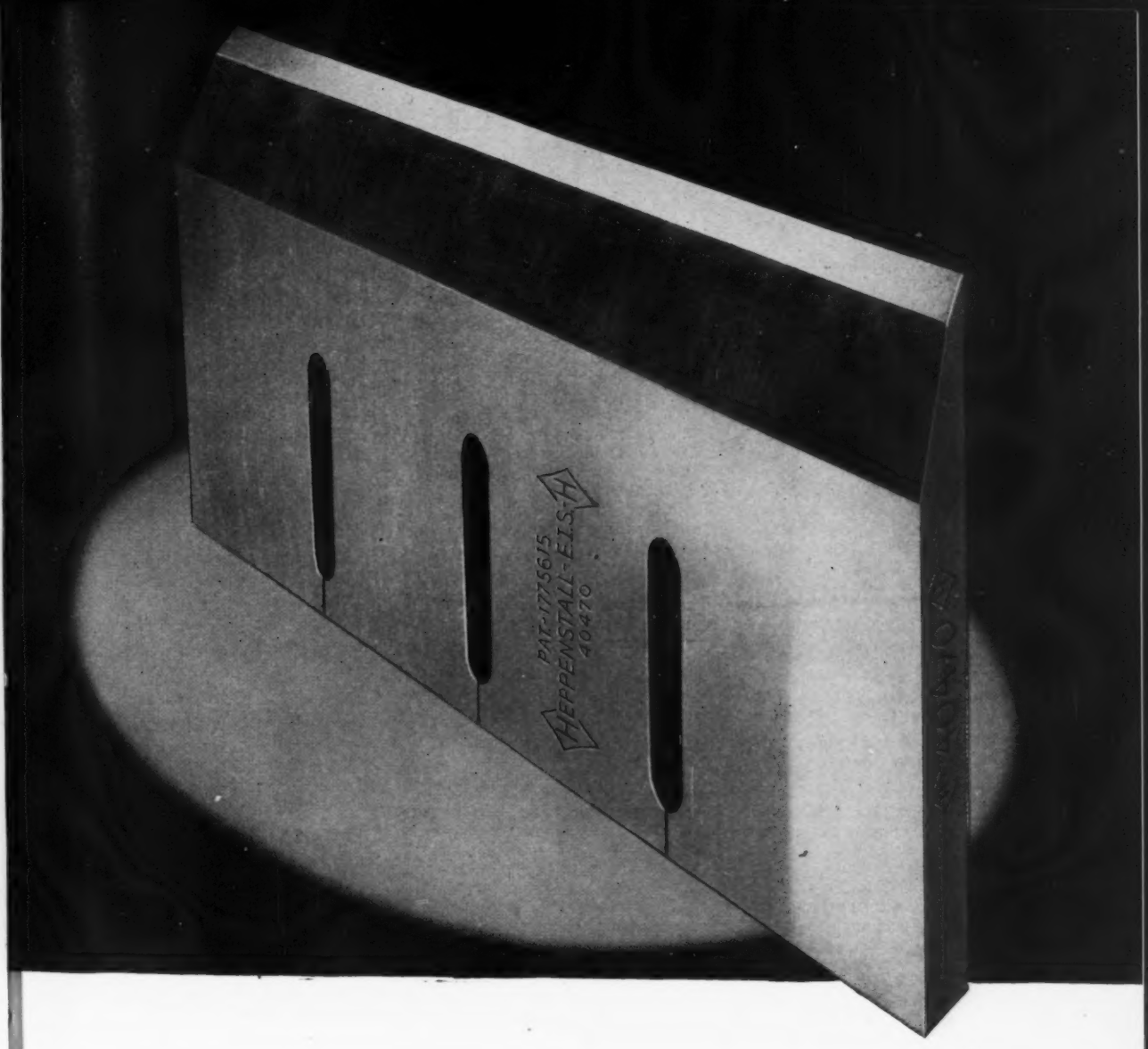
Designed jointly by Bangor & Aroostook, Magor Car, and Great Northern Paper Co., the cars give the railroad greatly improved turnabout because of the two or three hours saved by automatically discharging pulpwood from the side of the car instead of by hand. The railroad now has in operation 100 similar cars bought in 1946.

Hawley Assets Transferred

OREGON CITY, Ore. — The Hawley Pulp & Paper Co. has completed transfer of its accounts and assets to its successor, the Publishers Paper Co. Several of its paper specialty lines have been discontinued, Richard G. Adams, general manager, reports and two machines formerly turning out specialty paper have been transferred to newsprint. The plant has been newly equipped with a hydraulic barker and a pulp drier is expected to be in operation about November 1.

Hercules Container Incorporates

BOSTON — The Hercules Container Corp., 32-34 Binford street, has been incorporated to buy, sell, etc., paper, cloth, metal, etc., with capital stock of 5,000 common npv shares. Joseph D. Caini is president; Carl J. Berg, treasurer; and Marshall E. Gazette, clerk.



The Knife that *changed* an Industry

By manufacturing the *first* solid alloy steel chipper knife, Heppenstall revolutionized the entire industry. For under the most severe service conditions, the solid alloy steel knife proved superior to all others because it retained keen edges *longer* . . . operated *more* hours between grinds . . . yielded more uniform chips with less sawdust waste.

Through continued research, Heppenstall has led the way in chipper knife development. Today, the problems posed by higher disc speeds and harder woods are being solved through the combination of Heppenstall's own electric induction steels *plus* correct knife design.

Certainly, it will pay you to install Heppenstall E.I.S. Knives—the standard of quality in chipper knives.

HEPPENSTALL COMPANY · PITTSBURGH 1, PA.

Collins Receivership Dissolved

NORTH WILBRAHAM, Mass. — The Holyoke Magazine Press of Holyoke has given up the idea of taking over the Collins Mfg. Co., papermaker, of North Wilbraham, Sherman H. Bowles, Springfield newspaper publisher and owner of the Magazine Press, disclosed on July 28.

One of the reasons given for abandoning the project is that six lawyers involved in the affair are said to want $70,000 in fees.

The Collins mill, owned by the Whiting family of Holyoke and managed in recent years by Paul C. Bast of Longmeadow, son-in-law of Mrs. Samuel R. Whiting, is now in the hands of a receiver and is involved in litigation. James G. Whiting of Holyoke is suing Mr. Bast, his brother-in-law, for $60,000 to recover for two promissory notes.

Mr. Bowles became interested in the property because of the possibilities of developing its de-inking equipment for newsprint production.

Strong probability that the Collins company will be sold shortly loomed August 4 after it was announced that the temporary receivership under which the firm has been operated had been terminated.

Concurrently, it was reported that another large papermaking company was interested in taking over the plant and equipment of the company. Sources close to the company acknowledged that discussions were underway, but refused to identify the prospective buyer other than to say it was an out-of-state firm.

Termination of the temporary receivership left Paul C. Bast's ownership of the company completely free of legal entanglements and will permit negotiation of the sale without further difficulty, they said, adding the belief that the sale would occur promptly.

The prospective buyer would continue operating the plant, being particularly interested in the large and skilled labor supply in the North Wilbraham area, it was reported.

Survival of the plant, one of the oldest manufacturing companies in this area, was insured by the Federal Court action in dismissing the involuntary petition in bankruptcy, and Superior Court action to end the receivership and restore ownership to Bast.

In order to effect the reorganization, the Union Trust Co. has taken a first mortgage of $430,000, and the estate of Samuel R. Whiting, former owner of the papermaking plant, will assume a second mortgage of $100,000.

The surprise move by attorneys representing the Whiting estate, Mr. Bast, and the receiver, E. H. Thomson, obviated the action taken to date to have the paper-making company declared bankrupt.

Engaged in paper-making since 1876, the Collins Co. in recent years has been engaged in the new field of de-inking newsprint for reuse. Under the direction of Mr. Bast, son-in-law of Mr. Whiting, the former owner, the plant operated very profitably, so that considerable expansion was justified. Rehabilitation of both the plant and equipment was undertaken. But on April 18, the company suffered a serious fire, and encountered financial difficulties.

Four days later, a request for receivership was filed, and, as a result, Mr. Thomson was appointed receiver. Under his administration, the company has been operating at a high level of activity, particularly in the filling of several government contracts which were pending at the time the receivership was granted.

About a month after Mr. Thomson assumed the responsibility of acting as receiver, the three creditors of the company, all with reasonably small sums due them, filed a petition in the Federal Court at Boston asking that Collins be declared bankrupt.

Through the cooperation of a number of large creditors, including Union Trust and the estate of Mr. Whiting, simultaneous action in both federal and state courts brought ownership of the company back to Mr. Bast. All trade creditors are being paid in full, and operations will be continued at least at their present levels.

New officers of the company are: E. H. Thomson, former receiver, president; Walter S. Ricker, treasurer; and William W. Yerrall, attorney, who is also counsel for Mr. Bast, as clerk.

Directors of the company include Messrs. Thomson, Ricker, and Julius Gerzoff, an attorney, of Freeport, L.I., representing the Whiting estate.

An agreement for entry of judgment "for neither party, no suit hereafter to be brought for the same cause" was filed in the clerk's office at Superior Court at Springfield on August 4 in the case of James G. Whiting vs. Paul C. Bast.

Mr. Whiting had entered suit to recover $60,000 on promissory notes. A $60,000 mortgage was given to him by Mr. Bast and his wife, Mrs. Margaret (Whiting) Bast, on their residence and on three parcels of property in Ludlow. Under the terms, the Basts are to pay off the $60,000 with four percent interest within one year.

Dr. Otto Behrend Feted

ERIE, Pa. — Dr. Otto F. Behrend, treasurer of the Hammermill Paper Co., since its founding in 1898, and who is currently observing his 50th year with the firm, was honored with a surprise party on July 30 by the girls of Hammermill's Cosmos Club.

"The Doctor," Hammermillites assert, is not only the organization's most popular mehmber, but also its promptest. For years he has been at his desk by seven o'clock each morning—a roll-top desk he has used for 50 years.

In the mill's early days Dr. Behrend, in addition to serving as treasurer, was chief chemist and the tiny plant's entire laboratories force. Today he is a member of the board of directors and of its executive committee.

In the community, he is a director of First National Bank and a member of the board of corporators of Hamot Hospital. He was the first president of Erie Kennel Club and is a charter member of Erie County Motor Club.

Born in Germany, Dr. Behrend came to this country in 1898, after graduating from the University of Berlin. In 1903 he became a citizen of his adopted country.

Dr. Behrend is a member of the Press, Erie and Kahkwa clubs and of the American Chemical Society.

St. Regis Names Jackson A.M.

NEW YORK—Norton B. Jackson has been named advertising manager of the St. Regis Sales Corp., a subsidiary of the St. Regis Paper Co. Mr. Jackson came to St. Regis from the American Can Co. where he was advertising manager. Previously, for a number of years, he was advertising manager of the Thatcher Glass Mfg. Co.

Name Orchard and Dudley

ST. LOUIS—Among eight vice chairmen appointed to the special gift division of the Community Chest campaign which begins Nov. 8, are Charles P. Orchard of the Orchard Paper Co., and Dudley French of the Graham Paper Co.

Bennett Leaves Stebbins

WATERTOWN, N. Y.—Stebbins Engineering & Mfg. Co., reported the resignation of Murray H. Bennett as sales engineer, effective August 1, adding that John E. Maxson has been transferred to its sales engineering staff.

Pullan Co., Incorporates

BOSTON—Pullan Paper Box Co., Inc., 100 Grove Street, Worcester, Mass., has been incorporated with capital stock of 100 npv common shares. F. R. Schreiter is president and treasurer; Paul Revere O'Connell, clerk.

Bemis Expands In Minneapolis

MINNEAPOLIS—Bemis Bro. Bag Co. has bought one of the buildings now occupied by the American Refrigerator & Machine Co. After alterations the building will house portions of the Bemis packaging service organization.

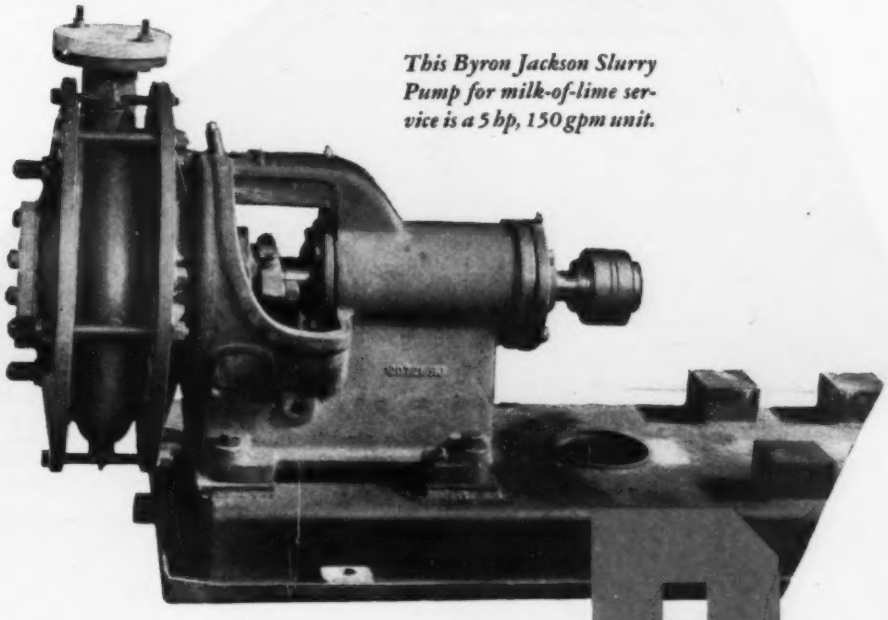
Consolidated Assessment

WISCONSIN RAPIDS, Wis. — Consolidated Water Power & Paper Co. on July 27 was granted a reduction of $1,150,731 in the assessed valuation of its main mill in this city.

Philadelphia Office Closed

NEW YORK — The Jessup & Moore Paper Co., 60 East Forty-Second street, has closed its Philadelphia office, Wm. F. Wiegmann, assistant treasurer, told *Paper Trade Journal* on August 5.

free from abrasive losses



This Byron Jackson Slurry Pump for milk-of-lime service is a 5 hp, 150 gpm unit.

BJ

milk-of-lime pumps

ALL PUMP PARTS that contact the abrasive liquid are cast from Ni-hard . . . the finest possible alloy for abrasive conditions. So hard (600 Brinell) you can't drill or tap it. BJ solved this engineering problem by constructing these Slurry Pumps with covers clamped in place by two steel plates—one of the plates is bolted firmly to pump bracket.

NOTE HOW SIMPLE dismantling is with the BJ design. The covers are easy to remove. The heavy-duty stuffingbox has a lantern ring with flushing connection.

BJ *MILK-OF-LIME* PUMPS are available in a wide range of sizes. For further information, write for the BJ folder describing pumps for the Pulp and Paper Industry.

Byron Jackson Co.

Since 1872

LOS ANGELES 54, CALIFORNIA

Offices in Principal Cities

Holyoke Power Battle Rages

HOLYOKE, Mass.—Striking back at the Municipal Gas and Electric Department in a determined effort to protect their own power rights on the Connecticut River, local paper manufacturers, through their Holyoke Water Power Co., disclosed on Aug. 6 that the private utility has filed with the Federal Power Commission an application for a license to construct and operate a new hydro-electric plant near the Holyoke Dam with an ultimate capacity of 60,000 kilowatts.

The announcement was made by Robert E. Barrett, president-treasurer of the Holyoke Water Power Co., in a surprise move at a meeting in the company's headquarters attended by numerous paper manufacturers (all users of indentured water), representatives of the Chamber of Commerce, the Holyoke Taxpayers' Association, the municipal government, and organized labor.

Also present were officials of the Municipal Gas and Electric Department, which had previously filed with the FPC an application for a permit to conduct a preliminary investigation on the desirability of municipal operation of river power.

Headed by Francis H. King, department manager, the public utility was represented also by Commissioners Edward D. Hallissey and John J. D. McCormick; Philip Bond, local architect who prepared plans for the Municipal Gas & Electric Department's project, and P. J. Kennedy, engineer who was engaged by the department to work as a liaison agent between manufacturers and the municipal agency.

The new application, filed after an exhaustive engineering survey, was said by Mr. Barrett to be the "best possible plan for full utilization of the river potential." There was no inkling beforehand that the plan had been under study or that an application was actually being filed in Washington concurrently with the meeting here.

Municipal officials appeared dumbfounded at the action. Manager King participated in a general discussion that followed and expressed the opinion that "it was quite a reversal of form and attitude on the part of water power executives." He added that their plan was substantially the same as the one prepared by the municipal department. Mr. King submitted that the new project failed to take into consideration the indentured rights of the municipality, and on this score might face legal entanglements before becoming an actuality.

Mr. Barrett's statement read: "It is planned to construct one 15,000 kilowatt unit initially and to construct three additional units of the same size as they become economically justified.

"In connection with the new hydro-electric plant, and supplementary thereto, the company proposes to continue the operation of its existing canal system and hydro-electric plants. It is also proposed that the local hydraulic equipment owned by the mills and others be operated in as efficient coordination as possible with the entire project.

"If the license is granted before the end of 1948, it is expected that the construction work on this new hydro-electric plant will begin by June 1949 and that the plant will be in operation within two years thereafter. Field survey work will begin immediately in the bed of the river.

"The cost of the first 15,000 kilowatt hydro-electric unit is estimated to be $4,000,000. The construction of the new unit will be financed by money to be borrowed from insurance companies.

"The installation of this new hydro-electric plant will continue the company's program of expanding the electric generating facilities with which it serves its customers in Holyoke, Chicopee and South Hadley.

"A new 15,000 kilowatt steam turbo-electric generator is now nearing completion in the company's steam power plant at the foot of Appleton Street. The new 15,000 kilowatt hydro-electric unit will be the largest hydro-electric generator in Massachusetts and it will bring the combined steam, turbo-electric and hydro-electric generating facilities of the company to nearly 68,500 kilowatts. Jackson and Moreland, engineers, have designed this new hydro-electric plant."

Following the meeting, King issued a statement outlining the views of his Municipal Gas and Electric Department, which had been opposed by the paper manufacturers on its own federalization project. Said King:

"As a result of the sudden action of the Holyoke Water Power Co., in filing its new application for a 60,000 kilowatt hydro-electric development on the Connecticut River at the Holyoke dam, the question of the need and economic justification of such a project consequently no longer exists.

"This action completely vindicates the action and substantiates the statements of the Municipal Gas and Electric Commission in filing its application for the development of the Connecticut River at Holyoke in the interests of the city of Holyoke.

"It should not be overlooked that for months, representatives and propagandists of the Power Co., have been claiming that the river is completely developed, that there is no waste of power in the river. What a different story is found in the new Holyoke Water Power Co. application!

"The question now only remains, who is going to develop the river—who is to have title to the water rights?

"We will all, therefore, await with much interest the detailed wording of the newly-filed application."

To Honor Thos. B. McCabe

PHILADELPHIA—Thomas B. McCabe, chairman of the Federal Reserve Board, will receive the 1948 Commerce and Industry Award of the Chamber of Commerce at that organization's Pennsylvania Week luncheon at the Benjamin Franklin Hotel, September 27, Arthur C. Kaufmann, president of the Chamber of Commerce, disclosed on August 5.

Mr. McCabe is on leave as president of the Scott Paper Co.

Mead Revises Sales Plan

LYNCHBURG, Va. — Sale of chestnut board products from the local plant of the Mead Corp. are being cleared through Mead Board Sales, Inc., Cincinnati and Lynchburg, effective August 1. Sales formerly were directed by the Mead Sales Co.

Associated Leases On Spring St.

NEW YORK—Associated Paper Products Co., Inc., has leased quarters at 106 Spring Street. Present location of the firm is at 237 Lafayette Street.

Purchases Ottumwa Firm

KEOKUK, Iowa — N. Hoerner, president of the Iowa Fiber Box Co. reports purchase of an interest in the Ottumwa Shipping Container Co., Ottumwa, Iowa. John F. Raney has been named sales and operations manager.

F. E. Menor and Leo J. Wilde, former Ottumwa officers, have sold their interests in the company. Mr. Menor will continue on a part-time basis. Mr. Wilde has retired.

New Parkersburg Merchant

VIENNA, W. Va. — Parkersburg Wholesale Paper Co., Inc., here, has obtained a charter from the Secretary of State, listing authorized capital stock at $10,000. Incorporators are John R. Dawkins and Howard Dawkins, both of Parkersburg, and Maxwell W. Wheaton, of Vienna.

Worcester Erecting Addition

MEDFORD, Mass. — The Worcester Paper Box Corp., 970 Fellsway, is erecting an $85,000 brick shipping and storage building having a floor area of 15,000 square feet. Present storage space will be used for manufacturing.

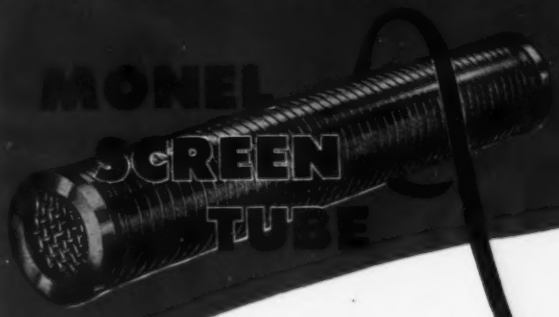
Potter Joins Lipp

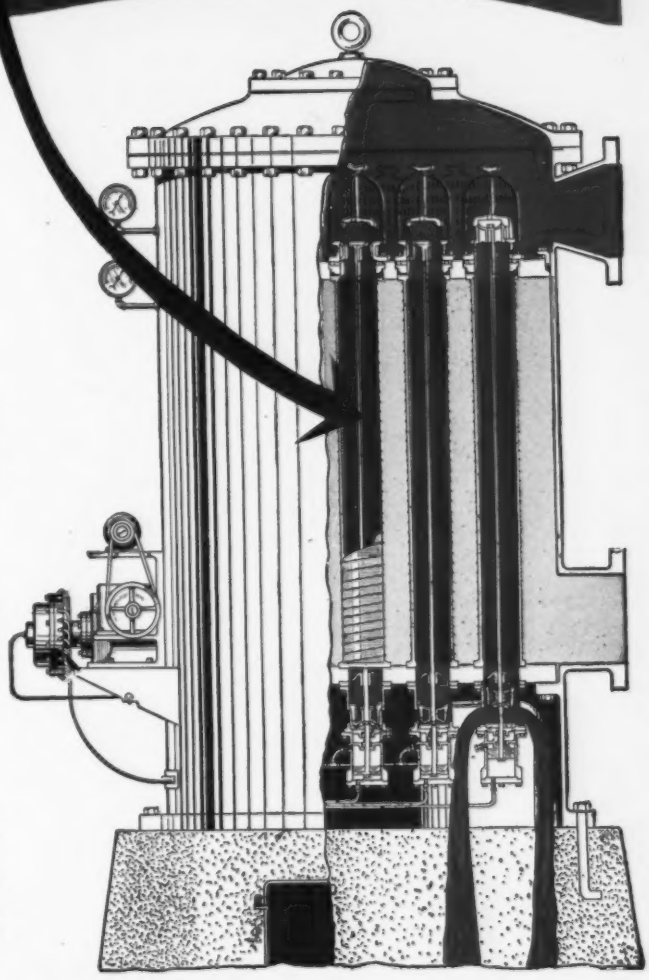
CHICAGO—Dale B. Potter has been named sales manager of the J. J. Lipp Paper Co. Mr. Dale was previously with the National Container Corp.

Sobel to Leeds Sales

NEW YORK—Alvin Sobel has been appointed divisional sales supervisor of the Leeds Sales Co. industrial tape department.

ADAMS AUTOMATIC WATER FILTERS





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BY THE PAPER INDUSTRY

✔ *for* PRIMARY FILTRATION

PORO-SCREEN Filters are a practical method for filtering water direct from the river or other source. Removes sand and grit 15 times finer than 1/32". Delivers a large volume of filtered water suitable for general mill service in the processing of newsprint, box board and other coarse grades of paper stock.

✔ *for* SECONDARY FILTRATION

PORO-STONE Filters provide effective filtration for water required in high grade paper stock. Installed following sand filter equipment, the PORO-STONE Filter eliminates finest sand, pipe scale and all foreign matter which might impair paper quality.

• •

ADAMS Filters (both PORO-SCREEN and PORO-STONE) are designed for continuous, automatic operation. No moving clearances to pass foreign material—no shut-downs required by back-wash cleaning—very little attention needed. *Constant filtration assured at all times.* Built in several sizes to meet your requirements. Write for Bulletin 901.

★ R. P. ADAMS COMPANY, INC. ★

231 EAST PARK DRIVE, BUFFALO 17, N. Y.

ADAMS PORO-STONE AND PORO SCREEN FILTERS

ENLARGED 40,000 DIAMETERS

HOWARD RODERICK, manager of calcium carbonate, chlorine and organic sales of the Wyandotte Chemicals Corp., Wyandotte, Mich., examines one of the 19 trade convention style displays which were shown at the third annual staff meeting of his firm's research department. The photographs he is examining were by the research staff on their electron microscope. They show particles of Wyandotte precipitated calcium carbonate enlarged 40,000 diameters. The photographs emphasize the variance in characteristics of the three grades of carbonate. Another display shown at the meeting demonstrated the use of radioactive materials as tracers in detergency studies.

Monsanto's Zack to St. Louis

ST. LOUIS—James G. Zack was added to the industrial relations group of the Monsanto Chemical Co. on August 1. His work will be the interpretation of company policies for employes. Mr. Zack previously was divisional director of public relations of Monsanto's Springfield, Mass., plant.

At the time of Mr. Zack's transfer, Don McCammond, divisional director at the Merrimack plant in Everett, Mass., became assistant to the director of public and industrial relations, in charge of the Merrimack, Springfield and New York City areas.

Although his transfer was effective on August 1, he will remain in the East through September.

Brewer to N. Y. for Nopco

HARRISON, N. J. — Appointment of Walter E. Brewer as district sales manager for its newly formed Eastern district was reported on August 1 by T. A. Printon, vice-president, industrial division, Nopco Chemical Co. Mr. Brewer will head the present field force of five representatives and will be responsible for sales of Metasap Chemical Co. products as well as those of the industrial division of the parent company. The district comprises the Middle Atlantic states from Metropolitan New York to Virginia.

Sumner Outfitting Tasmanians

VANCOUVER, B. C. — Canadian Sumner Iron Works, Ltd., has received orders for sawmill equipment from the Australian Newsprint Mills of Boyer, Tasmania. Negotiations were handled by S. L. Kessell, managing director of the Australian Newsprint Mills, who spent some time in Vancouver recently. Mr. Kessell was accompanied by R. W. Henry, assistant general superintendent of operations at Boyer.

The Australian Newsprint Mills are the only producers of newsprint in Australia. The company, controlled by leading newspapers of Australia, commenced commercial operations in 1941. Present capacity of approximately 30,000 tons annually is planned to be increased to 75,000 to 80,000 tons. This program includes extensive new logging roads and equipment in their large virgin timber holdings in Tasmania, a second paper machine to be built by Dominion Engineering Co. of Montreal, Tidmarsh ring-type grinders to supplement their present grinding machines, screen room equipment, beaters, storage tanks, etc., as well as the new sawmill to be equipped throughout with Sumner machinery.

Orders have been placed for Sumner log kickers, log stop and loader, Simondson log turner, Lueth skid lifts, complete air-operated log carriage drive supplied in Australia), ten-foot band mill, Cant lowering device, and 12" by 72" edger, together with spare parts, sawfiling equipment and other essentials.

Letters

Dear Mr. Heitzeberg:

I note on page 20 of your July 22nd issue of the "Paper Trade Journal" that announcement is made that Mr. Robert Driscoll has accepted the superintendency of the Niagara Mill of the International Paper Company.

Will you please correct this to read, "Mr. Driscoll has accepted the position of Assistant to the Superintendent of the Niagara Mill of the International Paper Company."

Mr. J. W. Canavan is still Paper Mill Superintendent.

H. P. BAILEY
Manager
International Paper Co.
Niagara Falls, N. Y.

To Be At Instrument Show

CLEVELAND—Bailey Meter Co. will display its standardized electronic type recorders at the Third National Instrument Conference and Exhibit in Philadelphia, September 13-17.

Shown in operation will be newly developed pH, conductivity and smoke density recorders. The pH and conductivity recorders will be combined in one instrument. The Bailey oxygen recorder and area type fluid meter will also be shown.

Holyoke Machine Co. Wage Boost

HOLYOKE, Mass. — A compromise raise of 7½ cents per hour has been granted by the Holyoke Machine Co., manufacturer of paper-making machinery, to its 100 employes, it was announced on Aug. 4. The increase ends negotiations with the United Electrical Workers Union, CIO, which began July 1.

Improves Filler System

UTICA, N. Y.—Recent changes in the filler system at the Mutual Box Board Co. include installation of a Shartle-Dilts 16-foot continuous Hydrapulper, a Miami No. 2A Jordan, and a Shartle stainless steel distributing head box. The Hydrapulper is equipped with a junk remover, ragger, dump pump, and Dilts Classifiner.

Glidden Soy Oil Plant

CLEVELAND—The Glidden Co. will build a soybean extraction plant in Indianapolis at an estimated cost of $3,000,000, Dwight P. Joyce, Glidden's president, reports.

It will include a 1,500,000 bushel grain elevator. Completion of the plant is expected by the middle of 1949.

Add Four Brammer Controllers

NEW YORK—After using a Brammer Consistency Controller in its Riverside mill for over a year, the Brown Co., Berlin, N. H., has installed four more Brammer Controllers purchased from Paper & Industrial Appliances, Inc., in its sulphate mill, tube mill and on the towelling machine.

Hardinge Advances Russell

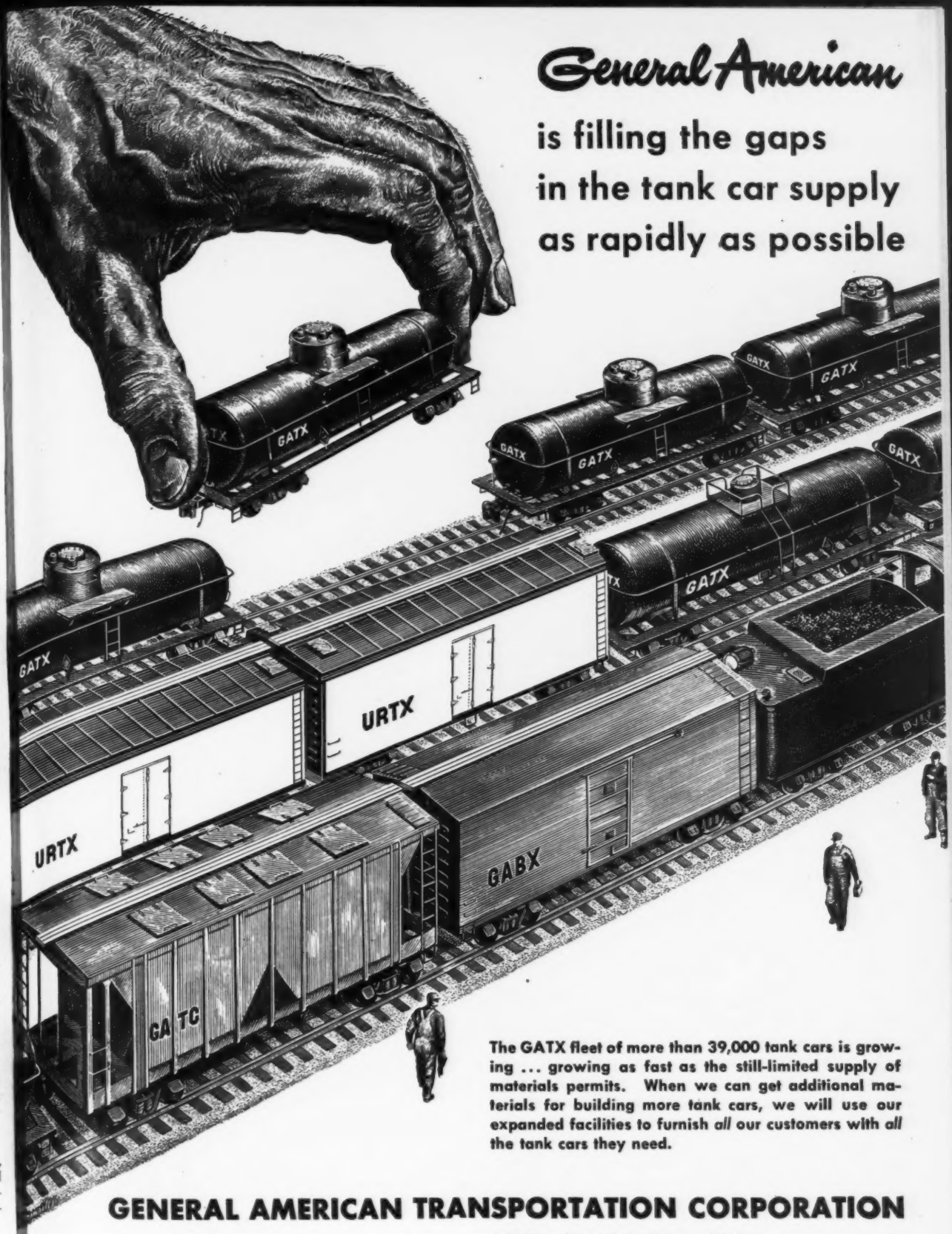
YORK, Pa.—The Hardinge Co., Inc., on August 4 elected Robert J. Russell secretary of the company and appointed him chief of the organization's technical staff.

New Chain Belt Office

RICHMOND, Va. — The Chain Belt Co. has opened a district sales office at 2900 West Clay street. Fred W. Taylor is district manager.

General American

is filling the gaps in the tank car supply as rapidly as possible



The GATX fleet of more than 39,000 tank cars is growing ... growing as fast as the still-limited supply of materials permits. When we can get additional materials for building more tank cars, we will use our expanded facilities to furnish *all* our customers with *all* the tank cars they need.

GENERAL AMERICAN TRANSPORTATION CORPORATION

GATX GENERAL AMERICAN TRADE MARK

135 South LaSalle Street, Chicago

DISTRICT OFFICES: Buffalo • Cleveland • Dallas • Houston • Los Angeles • New Orleans
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EXPORT DEPT., 10 East 49th Street, New York 17, New York

World Newsprint Production

(Continued from page 11)

world total. The United States and Newfoundland follow Canada in the order named as the next most important producers of this grade of paper. The United Kingdom, which in 1946 had ranked as the world's fourth largest manufacturer of newsprint, last year dropped to sixth place, behind Sweden and Finland.

It has been found necessary to revise Table III which shows the 12-year production record of newsprint 1928-1939. Since the report for the year 1946 was issued it has been definitely determined that the figures previously reported for Japan had been overstated to a considerable degree due to the inclusion of other printing grades. The 12-year average shown in this table is 7,240,000 tons, which 1947 production exceeded by more than 400,000 tons. The best production year to date was 1937 when 8,880,000 tons were produced. However, production in that year was abnormally high due to a considerable extent to the accumulation by newspaper publishers of extraordinarily large stocks which was partly reflected in a 1,400,000 ton decrease in output in 1938.

Distribution

Despite the fact that newsprint is an important commodity in world trade there are only five countries which can be classified as important exporters of this grade of paper. Exports from these countries ranged from more than 4,200,000 tons down to somewhat in excess of 100,000 tons. These countries listed in order of importance are Canada, Newfoundland, Finland, Sweden and Norway. The United States, with exports of only 28,000 tons, was the next largest exporter.

Canada: Canada, in keeping with its position as the largest newsprint producer, is also the world's greatest exporter. Of the 4,447,000 tons of newsprint produced last year, 95 percent or 4,221,000 tons were exported to 69 countries in all parts of the world. The United States always has been the most important market for Canada's newsprint and last year 3,690,000 tons or 87 percent—a slightly larger proportion of the total than in 1946—of Canadian exports were shipped to this country.

Latin American countries were the destinations of 168,000 tons of Canadian newsprint which was 19,000 tons under the quantity exported in 1946, due to a 13,000 ton decrease in shipments to Brazil and 6,000 tons to Mexico. Argentina was the destination of 50,000 tons while 30,000 tons went to Brazil, 22,000 tons to Mexico, 18,000 tons to Cuba and 12,000 tons to Uruguay. Another 18,000 tons was divided almost equally between Chile and Colombia.

Approximately 73,000 tons of newsprint were exported from Canada to Europe with 64,000 tons or 88 percent of this total going to the United Kingdom, while 6,000 tons went to the Netherlands and 2,000 tons to Greece. Exports to the United Kingdom in 1947 were 29,000 tons or 31 percent under those in 1946.

A total of 40,000 tons of Canadian newsprint was exported to the African Continent last year with nearly 37,000 tons or 92 percent going to the Union of South Africa, while less than 2,000 tons went to Egypt. Nearly 59,000 tons of newsprint passed through Canadian ports in 1947 on the way to various Asiatic countries. Of this quantity, nearly 36,000 tons went to China, while shipments destined for India amounted to 16,000 tons. Another 3,000 tons went to British Malaya and somewhat less than that to the Philippines. Following the United States, Australia represented the next largest market for Canadian newsprint, with almost 162,000 tons exported there in 1947, while 24,000 tons went to New Zealand.

TABLE II

World Production Newsprint Paper 1947—1946—1939

(Short Tons)

Country	1947	1946	1939
Canada	4,447,000	4,143,000	2,869,000
United States	826,000	771,000	939,000
Newfoundland	373,000	363,000	305,000
Sweden	302,000	290,000	305,000
Finland	297,000	259,000	519,000
United Kingdom	288,000	330,000	848,000
France	203,000	133,000	276,000
Norway	124,000	121,000	226,000
Japan	99,000	83,000	306,000
Germany	72,000*	80,000*	415,000
Belgium	50,000	35,000	54,000
Austria	42,000	29,000	25,000
Switzerland	41,000	38,000	40,000
Netherlands	39,000	39,000	104,000
Czechoslovakia	39,000	38,000	24,000
Italy	37,000(?)	32,000	66,000
Australia	36,000	34,000	.....
Poland	35,000	29,000	25,000
Brazil	18,000	9,000	6,000
Spain	16,000	15,000	21,000
Hungary	10,000	4,000	5,000
Chile	6,000	6,000	12,000
Portugal	3,000	3,000	.....
Russia	250,000(a)	200,000(a)	210,000**
Bulgaria	(?)	.....	2,000
Total	7,653,000	7,084,000	7,602,000

* Exclusive of the Soviet Zone.

** Includes Estonia, Latvia and Lithuania.

(a) Estimate for Russia includes Soviet Zone in Germany, Estonia, Latvia, and Lithuania.

Newfoundland: Production of newsprint in Newfoundland is almost 100 percent for export, since local consumption is insignificant. Thus we find that 365,000 tons or 98 percent of the output found its way to other parts of the world. Here also, the major part of the tonnage exported—206,000 tons or 56 percent — went to the United States. Following in order of importance, 56,000 tons was shipped to the United Kingdom, 31,000 tons to Mexico, 27,000 tons to Australia, 19,000 tons to Argentina, and 16,000 tons to the Union of South Africa. Also, 6,000 tons was consigned to New Zealand and not quite 5,000 tons to India. The distribution pattern for Newfoundland newsprint in 1947 was much the same as in 1946 with some changes in quantities exported to certain destinations. Increases over 1946 in tonnage shipped amounted to 14,000 tons to the United Kingdom, nearly 8,000 tons to South Africa and 4,000 tons to New Zealand. On the other hand, 11,000 tons less went to Argentina, 5,000 tons less to Australia and approximately 3,000 tons less to the United States. While small quantities had been exported to France and Egypt in 1946, none was shipped to these countries in 1947.

United States: The United States, dependent as it is on foreign sources for a large proportion of its newsprint supply, exported only 28,000 tons in 1947 which was equal to the tonnage shipped in 1946. These exports represented three percent of domestic production. Approximately one-third or 9,000 tons went to Mexico while the Philippines were the destination of nearly 7,000 tons. To India went 3,000 tons, while a little more than 2,000 tons went to France, with slightly smaller quantities going to Cuba and Central American countries.

North American newsprint producing countries taken as a unit exported to all other parts of the world a total of 718,000 tons, representing 13 percent of their production.

Finland: Finland is another country which produces newsprint primarily for export, with domestic consumption in 1947 having been limited by law to 26,000 tons or approximately nine percent of production. The 272,000 tons of newsprint exported from Finland was even more widely distributed than shipments in 1946. There were, moreover, some pronounced changes in the quantities exported to several countries.

The United States, which in 1946 had ranked third in importance—preceded by Russia and Denmark—as a market for Finnish newsprint, last year found itself in first place due to 78,000 tons having been shipped here. This was more than twice the tonnage going to any other destination and three times the quantity exported to this country in 1946. Other substantial increases in exports over 1946 were: to Argentina 23,000 tons, to the United Kingdom 16,000 tons, and to Brazil 10,000 tons. There was, on the other hand, a decrease of 78,000 tons in exports to Russia.

To Europe as a whole went 116,000 tons which included 38,000 tons to Russia, 27,000 tons to Denmark, 24,000 tons to the United Kingdom, and 13,000 tons to Belgium. A total of 60,000 tons of Finnish newsprint was exported to Latin America, of which 37,000 tons went to Argentina and 19,000 tons to Brazil. To all Asiatic destinations went 13,000 tons with India the scheduled recipient of 10,000 tons, while nearly all of the approximately 5,000 tons shipped to Africa were destined for Egypt.

(Continued on page 26)

Helps your coated paper sell

The slicker "feel" and glossier appearance that NOPCO* ESI imparts to coated stock . . . enhances its sales appeal

Though NOPCO ESI is a comparatively *new* product, it is looked on as an *old friend* in many coated paper mills. That's because this aqueous dispersion of an insoluble metallic soap helps in so many ways to give your coated stock the slick feel, the luster and smooth finish that denote a product of the highest grade.

You'll get the same fine results from NOPCO ESI, the same brightness, gloss and smooth finish whether you use the conventional or paper machine coating process . . . whether you use starch or casein as the adhesive in your clay coatings. You'll also find that NOPCO ESI improves flow and brushing characteristics.

NOPCO ESI *reduces flaking and dusting* . . . More and more mills report that NOPCO ESI reduces flaking and cracking and improves fold . . . thoroughly plasticizes pigment particles even after the coating has dried with the result that dusting on the supercalenders is reduced, cleaner rolls and more efficient action assured. Some users even find NOPCO ESI useful in controlling foam in their coating composition.

SIMPLE—STABLE . . . NOPCO ESI is readily diluted to any desired concentration . . . gives a dispersion stable to both mild acids and alkalis.

GOOD SUGGESTION *for manufacturers of uncoated folding box board* . . . To improve your product from the printing standpoint — particularly when oil-base inks are employed — use NOPCO ESI with starch on the calender stack of the board machines.

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NOPCO ESI

Aqueous Dispersion of an Insoluble Metallic Soap

*Reg. U.S. Pat. Off.

NOPCO EVOLVED THROUGH RESEARCH

World Newsprint Production

(Continued from page 24)

Sweden: About 54 percent of Sweden's 1947 newsprint production was shipped beyond her borders in contrast to 1946 when slightly more than half of her output was retained for home consumption. With more than 50 countries listed as destinations, Sweden's exports amounting to 164,000 tons had world-wide distribution. As in 1946, heaviest shipments went to Argentina with 35,000 tons going there last year, while 28,000 tons went to the United States and 10,000 tons to France. The foregoing are the only countries which took as much as 10,000 tons of Swedish newsprint, while to only six other countries quantities of 5,000 tons or more were exported. To India went 9,000 tons; to Brazil 8,000 tons; while 6,000 tons each went to China, Portugal and Cuba, and 5,000 tons were consigned to Uruguay. The balance was made up of small shipments to a numerous list of countries all over the world.

Of Sweden's three largest 1947 customers, only the United States received a larger tonnage—26,000 tons more—than in 1946, while there was a falling-off in shipments to France of 11,000 tons and in those to Argentina of 4,000 tons.

Norway: Norway's newsprint exports in 1947 amounted to 106,000 tons and were about five times apparent domestic consumption. Consumers of newsprint paper in approximately 40 countries throughout the world were dependent on Norwegian newsprint for at least a part of their requirements. The largest quantities exported went to widely scattered destinations with 22,000 tons going to Argentina, 14,000 tons to Denmark, 12,000 tons to India, 9,000 tons to China and 8,000 tons each to the United States and Brazil.

* * * * *

The foregoing discussion covers the most important newsprint exporting countries since only small quantities went beyond the borders of other producing nations. Austria and France are the only other producers known to have exported more than 10,000 tons in 1947. Nearly all of the 18,000 tons exported from Austria went to neighboring European countries, while two-thirds of the 12,000 tons exported by France went to the United States.

* * * * *

A roundup of all available export data indicates that the United States was the destination of approximately 4,000,000 tons of newsprint with 97 percent originating in Canada and Newfoundland and the balance coming from seven European countries.

Latin America: Other Western Hemisphere nations, south of the United States, were the reported destinations of 413,000 tons of newsprint, 237,000 tons of which was shipped by North American producers, while 176,000 tons had its origin in Europe. Compared with 1946, there was a decrease in shipments from North America amounting to 20,000 tons, while exports by European producers increased by 38,000 tons or a net increase of 18,000 tons.

In this area, Argentina was the reported destination of by far the largest quantity of newsprint with a total of 162,000 tons, followed by Mexico with 65,000 tons, Brazil 64,000 tons, Cuba 25,000 tons, Chile 20,000 tons and Uruguay 19,000 tons. Shipments totaling 14,000 tons went to Colombia, 11,000 tons to Peru, 9,000 tons to Venezuela and 8,000 tons to the West Indies. Most of the remaining 16,000 tons went to Central America.

Europe: North America last year contributed 132,000 tons toward relieving the reported shortage of newsprint in Europe. Of this, 121,000 tons was destined for the United Kingdom. Also a total of 212,000 tons produced on that continent found its way to nearby countries. Of the newsprint produced in Europe, 48,000 tons was exported to Denmark, while 38,000 tons went to Russia and 30,000 tons to the United Kingdom. To France went 26,000 tons, to Belgium 21,000 tons, to the Netherlands and Portugal each 11,000 tons and to Greece 10,000 tons.

Africa: Africa was the destination of 71,000 tons of newsprint paper last year compared with 52,000 tons in 1946. Of this total, 82 percent or 58,000 tons went to the Union of South Africa—about 21,000 tons more than in 1946—while 9,000 tons went to Egypt.

Asia: Reported exports to Asia from all sources amounted to 135,000 tons in 1947 and were 30,000 tons greater than in the preceding year. The largest quantity—56,000 tons—went to India, while 54,000 tons was shipped to China and 10,000 tons to the Philippines. Last year's exports to India were 21,000 tons greater than in 1946 and those to China and the Philippines 4,000 tons and 2,000 tons respectively. Total exports to Australia and New Zealand were 219,000 tons or 23,000 tons larger than in 1946.

TABLE III
World Production of Newsprint Paper—1928-1939
(Thousand Short Tons)

Country	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	12-Year Average
Canada	2,869	2,625	3,648	3,209	2,753	2,599	2,017	1,914	2,221	2,504	2,729	2,381	2,622
United States	939	820	946	921	912	957	946	1,009	1,157	1,282	1,392	1,418	1,058
United Kingdom	848	954	1,033	1,004	970	940	830	790	719	608	637	646	832
Finland	519	457	449	402	329	316	285	254	241	223	217	214	326
Germany	415	512	521	525	464	446	412	450	540	590	623	600	608
Japan	306	324	313	284	278	263	247	218	180	191	213	199	251
Newfoundland	305	268	350	326	336	316	285	254	241	223	217	214	326
Sweden	305	278	303	282	298	272	266	257	265	240	275	234	273
France	276	347	424	331	358	353	335	275	243	240	210	136	294
Norway	226	188	212	200	182	155	167	200	104	202	189	198	185
Russia	200	234	192	217	193	190	135(?)	125(?)	100(?)	90(?)	48(?)	7(?)	144(?)
Netherlands	104	105	106	95	92	92	87	85	79	84	77	76	90
Italy	66	77	66	69	76	68	72	74	69	69	52	45	67
Belgium	54	39	57	53	48	51	39	40	44	50	57	50	49
Switzerland	40	46	50	44	45	39	45	45	49	47	48	40	45
Austria	25	55	62	57	50	50	50	53	62	64	62	57	54
Poland	25	37	44	32	34	32	23	23	27	27	23	20	29
Czechoslovakia	24	48	54	46	41	37	38	40	42	44	47	45	42
Spain	21	21	18	18	42	42	65	65	62	32	30	26	37
Chile	12	12	2	7	6	6	....	....	....	....	....	....	4
Brazil	6	6	8	....	....	....	....	....	....	....	....	....	2
Estonia	6	6	7	7	4	6	6	6	17	29	27	20	12
Hungary	5	5	4	....	....	....	....	....	....	....	....	....	1
Latvia	2	9	8	7	6	5	5	5	3	4	4	3	5
Bulgaria	2	2	1	....	....	....	....	....	....	....	....	....	....
Lithuania	2	2	2	....	....	....	....	....	....	....	....	....	....
Mexico	....	....	....	....	20	20	16	13	15	14	19	17	11
Denmark	....	....	....	....	1	6	7	9	10	10	11	16	6
Total	7,602	7,477	8,880	8,136	7,538	7,261	6,364	6,222	6,544	6,931	7,246	6,679	7,240

HYCAR AMERICAN RUBBER LATEX...
imparts valuable properties to pulp and paper

HYCAR latex added directly to the pulp in the beater or head box, or used as an impregnant for paper, imparts valuable properties not otherwise readily obtained.

Tear and wet strength are considerably increased. Resistance to oils, solvents and chemicals is obtained, with retention of good aging properties. The addition of Hycar also insures excellent flex life and scuff resistance, and in thick papers prevents separation of the laminations.

Thus, better physical properties may be obtained in high grade pulp. In other cases the use of lower grade stock may be permitted because of improved physical properties obtained by the use of Hycar latex. Paper is made adaptable to fields where it is not now used.

Present and potential applications for papers of this sort range from wallpaper to insoles, from gaskets to leather replacement material, from shelf liners to packaging papers.

HYCAR latex is very easy to use. In most applications no vulcanization is required. Normal drying times are used. And HYCAR latex is an inherently safe material to handle. *No solvent system is needed.*

We would be glad to work with you on any problems relating to the use of HYCAR latex. For more information, please write Department HJ-7, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

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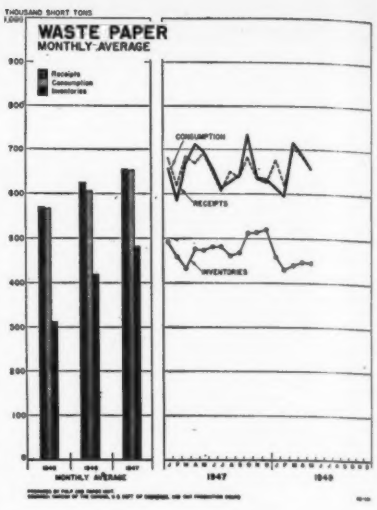
TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, August 11, 1948.

Indications that continued quiet in market pulp trading has finally disturbed the market's steadiness comes with reports that southern bleached kraft has begun to slip. Several offers at $155 per delivered ton better the domestic contract price of $175 and the Scandinavian of $185 on dock Atlantic ports. Unbleached kraft, soft in supply for some months, also is reported at lower figures, $125 and $127.50, with little interest evidenced in the $127.50 price.

Rising inventories of market pulp at partially-integrated and non-integrated mills suggest the probability of further resistance to high pulp prices. As of June 30, inventory gains total 7,500 tons over May 31 reports, and 190,000 tons over June, 1947. Unbleached sulphate shows the largest yearly increase, percentagewise, with almost 100 percent, unbleached sulphite is next with approximately 80 percent gain, bleached sulphate 75 percent, and bleached sulphite 33⅓ percent.

It generally is indicated that there will be no drop in Swedish and Finnish prices despite the concern which is being felt for the heavy cancellations by U.S. buyers. Pressure is however being exerted by Swedish producers to have their Government eliminate the export tax of approximately $14 a ton. A meeting to discuss the matter is reported as scheduled for this month between producers and the Swedish government, and it is hoped that our State Department will again make presentation of the U. S. views through the American Embassy. For although it is made plain that other markets have eagerly absorbed quantities cancelled by U. S. firms at prices without "significant changes," the American market is considered important, if only from the viewpoint of foreign exchange.

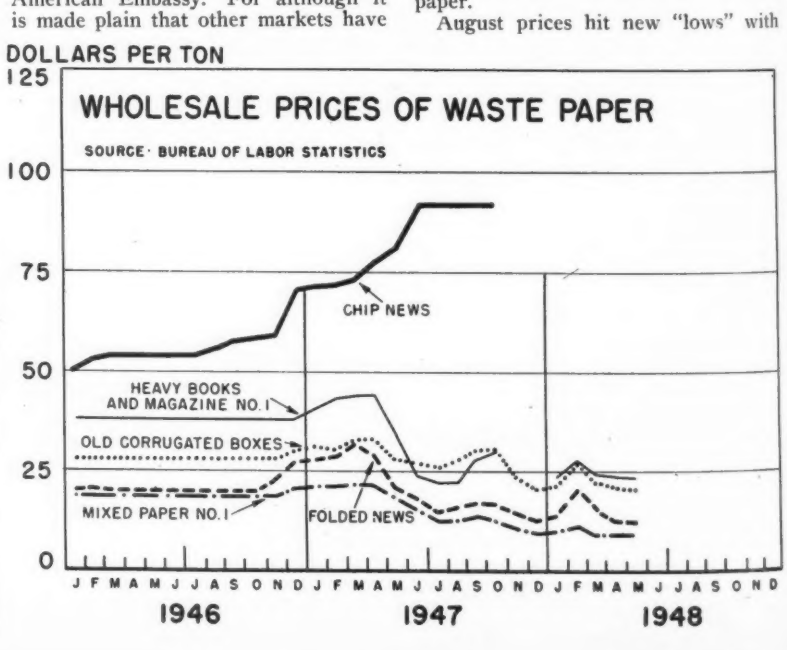


Waste Paper

Problems of supply face the waste industry also, but an oversupply. And although collections are feeling the two-fold reaction of a seasonal drying-up plus apathy of collectors because of low profits, there is abundant supply of all grades except the so-called "pulp substitutes."

Mill consumption is considered as virtually in balance with collections currently with purchases during the last five weeks reported by the ECC as 10 percent ahead of consumption. Thus the mill warehouses are again well-stocked as they were at the year's beginning. And the National Waste Paper Committee is faced with the problem of finding new markets for waste paper.

August prices hit new "lows" with


DOLLARS PER TON
125
100
75
50
25
0
WHOLESALE PRICES OF WASTE PAPER
SOURCE · BUREAU OF LABOR STATISTICS
CHIP NEWS
HEAVY BOOKS AND MAGAZINE NO. I
OLD CORRUGATED BOXES
MIXED PAPER NO. I
FOLDED NEWS
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1946
1947
1948

even lower prices being paid for distress lots as packers face the problems of storage space. As a result of these low prices, *folded news* particularly has dropped in collection tonnage—to such a degree that dealers begin to see a shortened supply with rising prices.

Mill agents stress quality of packing, says Director Colley S. Baker of the Eastern Conservation Committee, and dealers who meet specifications are "experiencing little difficulty in disposing of their stock at somewhat better than general market quotations." Thus it would seem that buying is proceeding on a limited scale where quality pack is provided.

Fine Papers

Although increased production costs are cited as justification for prevailing high prices of Scandinavian wood pulps, the existence of non-integrated U. S. mills is being jeopardized by inadequacy of reasonably-priced pulps. Limited operation is being forced upon many writing paper producers who are "getting the squeeze" between high-priced pulps, rising costs of labor and chemicals, and a competitive market with integrated mills. At least one company operated at a loss during the fiscal year just ended, and several others reported diminished profits.

Rises in sulphite prices were recently effected by integrated mills which were able to cover some of their rising labor and other production costs in the margin which existed between their prices and those of non-integrated competition. The differential which remains may be widened should the non-integrated mills be forced to pass along a portion of their increased costs. It can be considered as a possibility that sulphite bonds may show some price change, following on the heels of the almost general, and surprising rise in *rag-contents* in June.

Despite these price rises, demand is reported as steady and without unfavorable recession on *rag-contents* or upsurge on *sulphites*, the possible reaction judging by the current demand for each. Increased buying of *rag-contents* is not expected, however, while the supply of *sulphites* continues to improve. Some small inventories are being accumulated on this grade but they are being watched guardedly. Continued steady demand on a developing buyers' market is seen for the balance of 1948 at least. The slight current lull is seen as seasonal and a return to prewar buying levels. Increased government buying for the immediate future is not sizable enough to effect significantly the nation's supply of writing papers.

Thus while production problems of the non-integrated mills show no easement, the fine paper segment of the industry sees its business settling to a healthy level with election predictions added encouragement.

Indexes

Index of general business activity for the week ended July 31 sloped to 150.4 from 149.3 in the preceding week,

(Continued on page 30)

READY to Do These Jobs in Your Mill—WELL

1 Handle coating materials

2 Handle sizing materials

3 Handle lime mud

This is the diaphragm slurry pump that is doing an excellent job in chemical plants. It has excellent efficiency. But more than that, it offers great economy because of its durability and low maintenance. The diaphragm, for instance, is activated solely by vacuum, pressure or a combination of both. There is no mechanical linkage. And there are no weakening center or circumferential holes punched in it. There are no motor, stuffing box, packing or high-speed moving parts. Flows can be "cycled" or proportioned. Several sizes of pumps from 1 to 3 inches are available.

Write for Bulletin 309. It gives full details.

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IMPORTS

Week Ended August 7

NEW YORK

Newsprint

H. G. Craig, Donpaco, Donnacona, 362 rolls.
News Syndicate Co., Mimi, Thorold, 2249 rolls.
R. A. Olsen, A.C.D., Donnacona, 431 rolls.
News Syndicate Co., Ted, Thorold, 2213 rolls.
N. Y. World Telegram, Tudor Prince, Cornerbrook, 1981 rolls.
Clinton Paper Corp., Tudor Prince, Cornerbrook, 393 rolls.
Gilman Paper Co., Tudor Prince, Cornerbrook, 196 rolls.
H. G. Craig, Donpaco, Donnacona, 338 rolls.
Daily Mirror, Ethel Tombs, Gatineau, 437 rolls.
Montmorency Paper Co., Lovdal, Botwood, 3508 rolls, 1562 rolls (Alexandria, Va.).

Wrapping Paper

J. P. Heffernan Paper Co., Marine Flier, Genoa, 75 bls.

Parchment Paper

Stevens Nelson Paper Corp., Midland Victory, Antwerp, 5 cs.

Tracing Paper

Rohner Gehrig Co., Mormacsurf, Stockholm, 2 cs.

Serviettes

(———), Media, Liverpool, 10 crates (crepe paper).
H. W. Robinson Co., American Ranger, London, 11 cs. (& table mats).

Gummed Paper

B. F. Drakenfeld & Co., Media, Liverpool, 30 cs. (not printed).

Tissue Paper

B. F. Drakenfeld & Co., Media, Liverpool, 17 cs., 1 cs. (samples).

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H. Reeve Angel & Co., Inc., American Ranger, London, 5 cs.

Bristol Board

Penson & Co., American Ranger, London, 6 cs.

Wallpaper

(———), American Ranger, London, 1 cs.

Rags, Baggings, etc.

New England Waste Co., Marine Flier, Bombay, 100 bls. old jute rags, 160 bls. cotton waste.
M. O. Schimmel Corp., Marine Flier, Bombay, 250 bls. jutewaste.
E. J. Keller Co., Inc., Marine Flier, Bombay, 290 bls. Hessian cuttings.
Irving Trust Co., Marine Flier, Karachi, 119 bls. paperstock.
Harris Goldman, Marine Flier, Genoa, 52 bls. old cottons & fustians.
A. de Vries Trading Corp., Midland Victory, Antwerp, 262 bls. jute waste.
National City Bank, Khedive Ismail, Alexandria, 179 bls. old bagging. 60 bls. old hessian bagging, 297 bls. old burlap bagging.
E. J. Keller Co., Inc., Khedive Ismail, Alexandria, 90 bls. bright hessian bagging, 119 bls. hessian bagging, 138 bls. new cotton cuttings.
Irving Trust Co., Buenos Aires, Recife, 120 bls. cotton waste.
J. H. Schroeder Banking Corp., Bastogne, Antwerp, 375 bls. cotton waste.
Chase National Bank, Lisieux, Antwerp, 7 bls. wool waste.
National Bank of Retroit, Lisieux, Antwerp, 139 bls. jute bagging.
Bank of New York, Lisieux, Antwerp, 122 bls. jute waste.
Royal Manufacturing Co., Arizpa, Atnewrp, 54 bls. cotton waste.
(———), Flying Independent, Antwerp, 138 bls. scrap bagging.
Darmstadt Scott & Courtney, Flying Independent, Antwerp, 48 bls. old waste bagging.
National City Bank, American Ranger, London, 121 bls. Khaki cotton cuttings.
Irving Trust Co., American Ranger, London, 45 bls. new colored cottons.
C. Comiter, Exmouth, Bombay, 200 bls. cotton waste, 25 bls. old jute rags.
J. P. Fleising Co., Macalester Victory, Leghorn, 143 bls. old dark cotton rags.
New England Waste Co., Macalester Victory, Genoa, 165 bls. cotton waste.
National City Bank, Macalester Victory, Genoa, 239 bls. old bagging.
Amicale Wool Service Co., Wideawake, Buenos Aires, 42 bls. wool thread waste.
Chase National Bank, American Builder, Manchester, 13 bls. wool rags, 8 bls. wool thread waste.
W. Burnet & Son, American Builder, Manchester, 24 bls. wool rags.
(———) American Builder, Manchester, 21 bls. cotton waste.
American Express Co., American Builder, Manchester, 5 bls. wool rags.
C. Comiter, Chasten Maersk, Shanghai, 200 bls. cotton waste.
Midwest Waste Material Co., Jessie Maersk, Antwerp, 69 bls. jute waste.
Chase National Bank, American Jurist, Antwerp, 140 bls. jute waste.

Old Rope

Bank of The Manhattan Co., Khedive Ismail, Alexandria, 46 coils old rope.
(———), Mahout, Calcutta, 90 bales old rope cuttings.
(———), Explorer, Calcutta, 67 bls. old hemp rope cuttings.
(———), American Jurist, Antwerp, 53 coils old rope.
(———), Malancha, Calcutta, 340 bls. old hemp rope cuttings.

Gluestock

J. C. Gilbert Ltd., Marine Flier, Karachi, 290 bls.
National City Bank, Buenos Aires, Recife, 74 bls.
National City Bank, Bowgran, Buenos Aires, 102 bls.

Casein

American Cyanamid Co., A. Mitchel Palmer, Buenos Aires, 1000 bags (lactic), 50000 kilos.
Hercules Powder Co., Artilero, Buenos Aires, 3000 bags.
The Borden Co., Chemical Division, Lia, Buenos Aires, 1000 bags (ground lactic).
American Cyanamid Co., Wideawake, Buenos Aires, 500 bags 25000 kilos.
Colloids Inc., Wideawake, Buenos Aires, 200 bags (lactic) 10000 kilos.

China Clay

United Clay Mines Corp., Lord Glentoran, Fowey, 49 tons, 2 cwt.

Woodpulp

Scott Paper Co., (Newark, N. J.), Punta del Este, Vancouver, B. C., 632 bls. unbleached softwood sulphite pulp, 127 tons.

BOSTON

Blake & Co., Inc., Buenos Aires, 22 bls. woolen waste.

PHILADELPHIA

Philadelphia National Bank, American Builder, Manchester, 9 bls. wool rags.
Leigh Textile Co., American Builder, Manchester, 45 bls. mixed bagging.

BALTIMORE

Gottesman & Co., Inc., Mormacsurf, Gothenburg, 1778 bls. sulphate pulp.

LOS ANGELES

Bank of The Manhattan Co., Marine Flier, Bombay, 200 bls. old jute rags.
Wallworth Co., Marine Flier, Alexandria, 44 bls. hessian bagging.
Castle & Overton, Inc., Marine Flier, Genoa, 156 bls. bagging.
H. Adlerstein, Marine Flier, Genoa, 70 bls. old jute bagging.

SAN FRANCISCO

(———), Marine Flier, Genoa, 231 bls. dark cotton rags.
(———), Marine Flier, Leghorn, 447 bls. old dark cotton rags.

TRENDS

(Continued from page 29)

compared with 145.5 for the corresponding week of 1947.

Index of paperboard production rose to 177.5 from 172.6 in the preceding week, compared with 172.3 for the corresponding week of 1947.

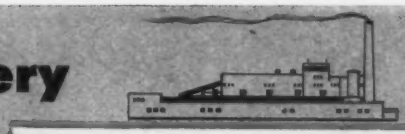
Comparative ratios of U.S. paper and paperboard production to mill capacity as reported by AP&PA are shown below:

	July 31 1948	July 24 1948	Aug. 2 1947	Aug. 3 1946	Aug. 4 1945
Paper*	98.8	**103.1	103.9	105.2	93.6
Paperboard .	92.0	91.0	99.0	98.0	94.0

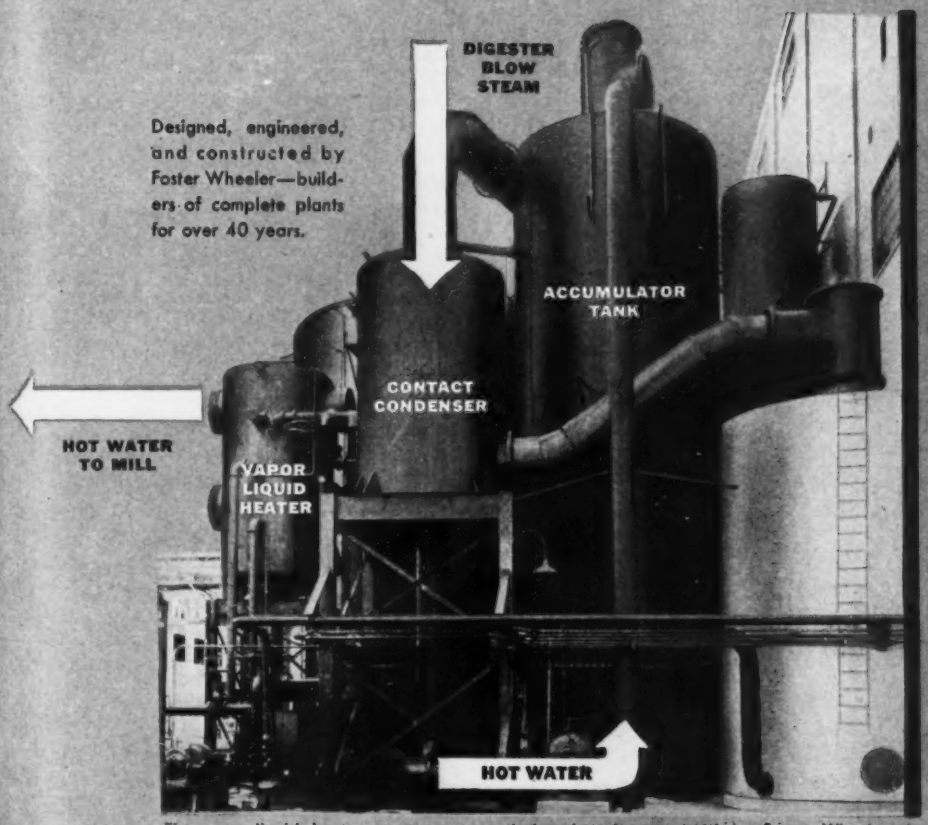
* Because of increases in 1948 capacity tonnage, production was greater than last year's, although this year's production ratio is lower. **Revised figure.

Digester Blow Heat Recovery

For Pulp Mills



Designed, engineered, and constructed by Foster Wheeler—builders of complete plants for over 40 years.



The vapor-liquid heat recovery system, designed and constructed by Foster Wheeler, is installed in a southern sulfate mill and serves seven 3,150 cubic-foot digesters at an annual saving of $40,800; the unit paid for itself in less than eight months time.

Units Pay For Themselves

Foster Wheeler builds surface condenser and vapor-liquid digester heat recovery systems which, according to performance records, pay for themselves within twelve months.

The recovery of heat is of paramount importance for economical pulp mill operation. Foster Wheeler engineers will be glad to study your particular problem and recommend the type of equipment which will give optimum service.

For further information, write . . .

FOSTER WHEELER CORPORATION, 165 BROADWAY, NEW YORK 6, N. Y.

FOSTER WHEELER

PRICES

Quotations indicate trends in an open market. At the moment they can be of little more value. While some volume business still is done under contract at the figures shown, fluctuations are too varied and frequent to permit prices to be interpreted as representing a wholly stabilized market.

NEW YORK

Paper

(Delivered New York)

Standard News, per ton—
Rolls, contract $96.00/100.00
Sheets ..... 111.00/ —

Kraft—per cwt.—Carload Quantities Zone A Deld. 40 lb. base wgt.
Superstandard Wrapping ..... $9.00/ —
No. 1 Wrapping 7.25/ 8.00
Standard Wrapping ..... 6.50/ —
Standard Bag ..... 6.50/ —

Tissues—Per Ream 24x36 (480) 11 lbs. Zone 1.
Wh. No. 1 Frd. ..... $1.84/$2.00
Wh. No. 1 M. G. 1.94/ 2.00
Wh. No. 1½ ..... 1.60/ —
Wh. No. 2 ..... 1.75/ —
Kraft Anti-Tar ..... 1.65/ —
Kraft Unbl. ..... 1.85/ —
Manila No. 2 ..... 1.62/ —
Shred. Wh. No. 1 cwt. 1.10/ 1.50

Toilet—Per Case of 100 rolls—1 M Sheets.
Unbleached ..... $8.50/$10.00
Bleached 8.50/ 10.00

Paper Towels—Per Case of 3750—Zone 1.
Wh. Jr. M'tif'd 9¼x9½ $5.15
Br. Sr. M'tif'd 10x12 ..... 3.60
Br. Jr. M'tif'd 9½x9¼ 3.10
Br. Jr. Sgl. fold 10x10¼ 3.15

Manila—per cwt.—C-1 f.a.
No. 1 Jute Tag ..... $14.50/ —
Reg. Jute Manila ..... 13.25/$15.50
No. 1 Manila ..... 9.75/ —
5 lb. Manila 10.75/ 11.25

Boards, per ton—
Plain News ..... $92.50/ —
Filled News ..... 94.00/ —
Plain Chip ..... 90.00/ —
Sgl. Mla. L-d. Chip* 100.00/102.50
White Pat. coated* ..... 120.00/ —
Kraft Liners 42 lb. ..... 100.00/ —
Kraft Corr. .009 ..... 105.00/ —
Binders Boards ..... 126.00/ —

* Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following prices are representative of distributers' resale prices, all deliveries in Zone 1:

Rag Content Bonds and Ledgers—
White, 16 lb.
Bonds, per cwt.

	Carton	4 C't'n	Ton
100% Rag Ext. No. 1	$59.00	$54.55	$52.30
100% Rag	52.25	48.30	46.30
75% Rag	40.00	37.05	35.50
50% Rag	33.75	30.70	29.50
25% Rag	30.25	27.45	26.35

Ledgers, per cwt.

100% Rag Ext. No. 1	$57.00	$52.65	$50.50
100% Rag	50.25	46.40	44.50
75% Rag	40.00	37.05	35.50
50% Rag	33.75	30.70	29.50
25% Rag	30.25	27.45	26.35

Sulphite Bonds and Ledgers—
White, 16 lbs.
Bonds, per cwt.

No. 1	$21.25	$19.25	$18.50
No. 2	20.25	18.30	17.55
No. 4	19.25	17.55	16.85

Ledgers, per cwt.

No. 1	$21.75	$19.65	$18.85
No. 2	20.75	18.75	18.05
No. 4	20.00	18.10	17.35

Free Sheet Book Papers—
White, Cased Paper

	(Per cwt.) Case	Ton
No. 1 Glossy Coated	$20.40	$19.50
No. 2 Glossy Coated	19.15	18.30
No. 3 Glossy Coated	18.40	17.60
No. 1 Antique (Watermarked)	15.90	15.15
No. 2 Offset	15.15 to 17.90	14.60 to 17.10
A Grade E. F.	14.90	14.25
A Grade S. & S. C.	15.40	14.65
B Grade E. F.	13.90	13.30
B Grade S. C.	14.40	13.70

Wood Pulp

Domestic mill contract prices delivered with varying freight allowances.

	Per Short ADT
Groundwood	$80.00/$81.00
Unbleached Sulphite	124.00/ —
Bleached Sulphite	125.00/135.00
Bleached Soda	130.00/ —
Bleached Sulphate	175.00/185.00
Unbleached Sulphate Northern	125.00/155.00
Unbleached Sulphate Southern	130.00/145.00

Canadian Quotations

Prices delivered with varying freight allowances unless otherwise specified:

	Per Short ADT
Bleached Sulphate	160.00/185.00
Unbleached Sulphate	125.00/150.00
Unbleached Sulphite	125.00/126.00
Bleached Sulphite	125.00/135.00
Glassine Unbleached Sulphite (no freight allowance)	120.00/ —
Bleached Soda	130.00/ —
Groundwood	80.00/ 85.00
Sideruns Pulping News	80.00/ 90.00
Hardwood and Specialty Grades	Nominal

Swedish Quotations

On dock, Atlantic Ports

Bleached Kraft	185.00/ —
Bleached Sulphite	185.00/ —
Unbleached Sulphite	155.00/157.50
Unbleached Kraft	147.50/ —

Finnish Quotations

On dock, Atlantic Ports

	Per Short ADT
Bleached Sulphite	$187.50/ —
Unbleached Sulphite	155.00/157.00
Unbleached Sulphate	147.50/ —

New Domestic Cotton Cuttings

(F.o.b. Ship. Pt. Plus Dealer's Commission)

White Shirt	$11.50/$12.00
Unbleached Muslin	12.00/ 12.50
Light Silesias	9.00/ 9.25
White Back Blue Overalls	9.00/ 9.50
Blue Overalls	8.00/ 8.25
Fancy Shirt	6.00/ 6.25
Light Percales	8.50/ 8.75
Light Prints	7.50/ 7.75
No. 1 Washables	5.00/ 5.25
Bleachable Khaki	7.50/ 8.00
Unbleachable Khaki	6.50/ 7.00
Cottonades	5.50/ 5.75

Old Domestic Cotton Rags

(F.o.b. Ship. Pt. Plus Dealer's Commission)

	Per 100 lbs.
No. 1 Whites Repacked	$5.50/ $6.00
No. 1 Whites Miscellaneous	4.50/ 5.00
No. 2 Whites Repacked	3.50/ 3.75
No. 2 Whites Miscellaneous	3.00/ 3.50
Blue Overalls	3.75/ 4.00
Thirds and Blues Repacked	3.25/ 3.50
No. 1 Roofing Rags	1.70/ 1.80
No. 2 Roofing Rags	1.60/ 1.70
No. 3 Jute Bagging	1.50/ 1.60
No. 4 Brussels and hard back carpets	1.50/ 1.60
No. 5A Roofing Rags	1.50/ 1.60

New Foreign Cotton Cuttings

(Prices to Mill, F.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	$5.50/ $5.75
New Mixed Cuttings	6.25/ 6.50
Light Silesias	9.25/ 9.50
Light Flannelettes	9.25/ 9.50
New White Cuttings	12.00/ 13.00
New Unbleached Cuttings	12.25/ 13.00
Fancy Shirt Cuttings	6.50/ 7.00
Light Prints	7.75/ 8.00
Bleachable Khaki, No. 1	7.00/ 7.50
Unbl. Khaki, No. 1	6.25/ 6.75

Old Foreign Rags

(Prices to Mill, F.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Linens	nominal
No. 2 White Linens	nominal
No. 3 White Linens	nominal
No. 4 White Linens	nominal
No. 1 White Cottons	8.00/ 10.00
No. 2 White Cottons	7.00/ 8.00
No. 3 White Cottons	6.00/ 6.50
No. 4 White Cottons	4.00/ 4.50
Extra Light Prints	6.50/ 7.00
Old Light Prints	4.50/ 5.00
Med. Light Prints	4.00/ 4.50
Dutch Blue Cottons	5.25/ 5.50
Checks and Blues	4.00/ 4.25
Linsey Garments	2.35/ 2.50
Dark Cottons, European	2.30/ 2.35
Dark Cottons, Egyptian	3.25/ 3.50
Old Shopperies	2.20/ 2.30
New Shopperies	2.25/ 2.30

Bagging

(Prices to Mill, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny, No. 1	$6.75/ $7.25
Domestic Gunny, No. 1	6.75/ 7.25
Heavy Wool Tares	6.25/ 6.50
No. 1 Scrap Baggings	5.50/ 5.75
Roofing Bagging	1.50/ 1.75
Foreign Manila Rope	6.00/ 6.75
Domestic Manila Rope	6.50/ 6.75
Jute Strings	5.00/ 5.25
No. 1 Sisal Strings	5.25/ 5.50
Mixed Strings	1.75/ 2.50

Waste Paper

Base Prices to Mills for Average Packings
F.o.b. New York, Baled

	(Per Ton)
No. 1 Hd. Wh. Env. Cts., one cut	$145.00/$155.00
No. 1 Hard White Envelope Cuts	135.00/ 145.00
No. 1 Hd. Wh. Shavings, unruled	130.00/ 140.00
No. 1 Hd. Wh. Shavings ruled	100.00/ 110.00
Soft White Shavings, one cut	130.00/ 140.00
No. 1 Soft White Shavings	115.00/ 125.00
Soft White Shavings, Misc.	105.00/ 115.00
No. 1 Fly Leaf Shavings	45.00/ —
No. 1 Gd'wd Fly Leaf Shavings	35.00/ —
No. 1 Heavy Books & Magazines	23.00/ 24.00
Mixed Books	13.00/ 15.00
No. 1 White Ledger	70.00/ 75.00
Col. Ledger	45.00/ 50.00
Manila Tab. Cards	80.00/ 85.00
New Man. Env. Cuttings, one cut	100.00/ 110.00
New Manila Envelope Cuttings	65.00/ 75.00
Extra Manilas	25.00/ 30.00
Mxd Kraft, Env. & Rag Cuttings	75.00/ 85.00
Kraft Envelope Cuttings	100.00/ 110.00
Triple Sorted, No. 1 Brown Soft Kraft	65.00/ 75.00
New Kraft Corrugated Cuttings	65.00/ 70.00
No. 1 Assorted Old Kraft	40.00/ 45.00
New Jute Corrugated Cuttings	27.00/ —
Old 100% Kraft Corr. Containers	30.00/ 35.00
Old Corrugated	14.00/ 15.00
No. 1 News	10.00/ 11.00
No. 1 Mixed Papers	7.00/ 8.00
Box Board Cuttings	7.00/ 8.00
White Blank News	65.00/ 70.00
Overissue News	14.00/ 15.00
Mill Wrappers	14.00/ 16.00

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)	
Coarse Polished—India	.35¼/ .36½
Fine Polished Fine India	.41¾/ .45
Unpolished—Paper Makers	.32 / .35½
Tube Rope	.33¾/ .35¼
Wrapping	.37 / .39
Cotton	.63¼/ .66¾
(Hard Fiber)	
Mex. Sisal	.21 / .27
Manila (Reprocessed)	.30 / .32
(American Hemp)	
Polished Hemp	.36¾/ .40
Unpolished	.32¼/ .34

PHILADELPHIA

Domestic Rags (New)

(F.o.b. Eastern Shipping Point)

Shirt Cuttings—	
New White No. 1	.10½/ .11
New White No. 2	nominal
Light Silesias	.07½/ .08
Black Silesias, soft	.06 / .06½
New Unbleached	.10½/ .11¼
Washable Prints	.06½/ .07
Washable No. 1	.05 / .05½
Blue Overall	.07½/ .08
Cottons—According to grade—	
Washable Shredding	.03 / .03½
Fancy Percales	.06¾/ .07¼
New Black Soft	nominal
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.05¾/ .06½
Bleachable Cotton Cuttings	.06½/ .07
Men's Corduroy	.05½/ .06
Ladies' Corduroy	.05 / .05½
Cottonades	.05½/ .06

Domestic Rags (Old)

(F.o.b. Eastern Shipping Point)

White No. 1—Repacked	4.50 / 5.00
Mixed White	4.00 / 4.25
White No. 2—Repacked	3.50 / 3.75
Thirds and Blues—	
Miscellaneous	2.50 / 2.75
Repacked	3.00 / 3.25
Roofing Stock—	
Foreign No. 1	nominal
Domestic No. 1	1.65 / 1.70
Domestic No. 2	1.55 / 1.60
Roofing Bagging	1.45 / 1.50
Old Manila Rope	— / 5.75

(Continued on page 34)

TENAX FELTS ARE LONG LASTING

SERVING THE PAPER INDUSTRY SINCE 1891

If you have not as yet put Tenax Felts to the test—or our service to the proof—we invite you to afford us that opportunity.

LOCKPORT FELT COMPANY • NEWFANE, NEW YORK

PRICES CONTINUED FROM PAGE 32

Bagging
(F.o.b. Eastern Shipping Point)

Gunny No. 1—	
Foreign	nominal
Domestic	$5.50 / 6.00
No. 1 Clean Bright—	
Sisal Strings	.04¼/ .05
No. 2 Clean Bright—	
Sisal Strings	.03¾/ .04
Sisal Jute	.02¾/ .03
Scrap—	
No. 1	5.00 / 5.50
No. 2	2.50 / 3.00

Old Papers
F.o.b. Phila. Mill Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	$100.00/$115.00
No. 1 Hard White Shavings, unruled	100.00/ —
Soft White Shavings	80.00/ —
White Blank News	65.00/ 70.00
Soft White Shavings, One Cut	/ 80.00
No. 1 White Ledger	65.00/ 70.00
No. 1 Heavy Books & Magazines	20.00/ 22.00
Overissue Magazines	nominal
New Manila Envelope Cuttings	75.00/ —
No. 1 Assorted Old Kraft	35.00/ 40.00
No. 1 Mixed Paper	7.00/ 8.00
Box Board Cuttings	8.00/ 10.00
Kraft Corrugated Cuttings	75.00/ 80.00
Old Corrugated	14.00/ 16.00
Overissue News	13.00/ 15.00
No. 1 News	10.00/ 12.00

BOSTON

Old Papers
F.o.b. Phila. Mill Prices, Baled

No. 1 Hard White Shavings, unruled	$6.25 /$6.75
No. 1 Hard White Shavings, ruled	6.00 / 6.50
Soft White Shavings, Misc.	6.00 / 6.25
No. 1 Fly Leaf Shavings	— / —
No. 2 Fly Leaf Shavings	4.25 / —
No. 1 Grdwd. Fly Leaf Shvgs.	1.75 / 2.00
No. 2 Groundwood Fly Leaf Shavings	1.50 / 1.75
Mixed Colored Shavings	2.00 / 2.25
New Manila Env. Cuts, one cut	4.50/ / 4.75
Hard White Envelope Cuts, one cut	7.00 / —
Triple S'ted No. 1 Br. Soft Kraft	3.75 / 4.00
Mixed Kraft Env. & Bag Cuttings	4.00 / 4.25
Kraft Envelope Cuttings	5.00 / 5.50
No. 1 Heavy Books & Magazines	1.75 / —
New Manila Env. Cutt'gs, one cut	—/ /
New Manila Envelope Cuttings	4.00 / 4.25
White Tabulating Cards	5.00 / —
Groundwood Tabulating Cards	1.50 / 1.75
White Blank News	2.25 / 2.50
No. 1 Assorted Old Kraft	3.50 / 4.00
No. 1 Mixed Paper	.47½/ —
Overissue News	.90 / 1.00
No. 1 News	.55 / .60
Box Board Cuttings	.60 / .70
New Corrugated Cuttings, Kraft.	2.75 / 3.00
Old Kraft Corrugated Containers	2.00 / 2.25
Old Corrugated Containers	— / 1.10
Jute Corrugated Cuttings	1.07½/ —
Paper Strings	2.00 / 2.25

Bagging
(F.o.b. Boston)

Gunny Bagging—	
Foreign	(nominal)
Domestic	7.00 / —
No. 1 Old Rope	6.25 / —
Mixed Strings	1.60 / —
Transmission Rope—	
Foreign	nominal
Domestic	3.00 / 3.50
Manila Rope—	
Foreign	nominal
Domestic	6.25 / —
Jute Carpet Threads	6.00 / —
Bleachery Burlap	— / 7.00
Scrap Burlap—	
Foreign	6.00 / 6.25
Domestic	6.00 / 6.25
South America	6.00 / 6.25
Wool Tares	
Foreign	6.25 / —
Domestic	6.25 / —
Austr. Wool Pouches	7.50 / —
New Zealand Wool Pouches	7.50 / —
New Burlap Cuttings	6.50 / —
Heavy Baling Bagging	5.25 / 5.75
Paper Mill Bagging	5.50 / 5.75
No. 1 Roofing Bagging	2.25 / 2.50

Domestic Rags (New)
(F.o.b. Boston)

Shirt Cuttings—	
New Light Prints	.07½/ —
Fancy Percales	.08 / —
New White No. 1	.11 / .11¾
New Light Flannelettes	.08 / .08½
Canton Flannels, Bleached	.10 / .11
Underwear Cutters, Bleached	.11½/ —
Underwear Cutters, Unbleached	.11 / .12
Silesias No. 1	.08 / .08½
New Black Silestas	.04½/ —
Red Cotton Cuttings	.05 / —
Blue Overalls	— / .08½
Soft Unbleached	.11 / .12
Blue Cheviots	.08½/ .09
Fancy	.06 / —
Washable	.06 / —
Khaki Cuttings	.06½/ .07½
Corduroy	.03½/ —
Men's Corduroy	.04 / —
Khaki Canvas	— / .06
B. V. D. Cuttings	.11½/ —

Domestic Rags (Old)
(F.o.b. Boston)

White No. 1—	
Repacked	5.00 / 5.50
Miscellaneous	4.50 / 5.00
White No. 2—	
Miscellaneous	2.65 / —
Twos and Blues, Repacked	2.75 / —
Old Blue Overalls	4.00 / 4.50
Thirds and Blues, Repacked	2.20 / —
Miscellaneous	1.80 / —
Black Stockings	3.50 / 4.00
Roofing Stock—	
No. 1	1.70 / —
No. 2	1.60 / —
No. 3	1.50 / —
No. 4	1.50 / —
No. 5, Quality A.	1.60 / —
Quality B.	1.50 / —
Quality C.	.95 / —
Old Manila Rope	6.00 / —

Foreign Rags
(F.o.b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper
(F.o.b. Chicago) Mill Prices, Baled

Shavings—	
No. 1 Hard White Envelope cuts, one cut	$140.00/$150.00
No. 1 Hard White Shavings, unruled	130.00/ —
No. 1 Soft White Shavings	110.00/ —
No. 1 White Ledger	60.00/ 65.00
No. 1 Heavy Books & Magazines	28.00/ 30.00
White Blank News	50.00/ 55.00
Mixed Kraft Env. & Bag Cuttings	70.00/ 90.00
No. 1 Assorted Old Kraft	25.00/ —
Overissue News	16.00/ 17.00
No. 1 News	13.00/ —
No. 1 Mixed Paper	9.00/ —
Old Corrugated	15.00/ —
Mill Wrappers	11.00/ —

MARKETS

Blanc Fixe
Demand strong. Prices firm. Pulp is currently quoted at $87.00 in bags, car lots at works, 6 cents per pound, l.c.l., deld.; by-product $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder
Supply adequate. Delivery good. Shortage of shipping containers restricts export. Prices range from $4.25 to $4.50 per 100 pound drums, l.c.l. works.

Casein
Demand dull. Argentine prices softer. Domestic supply limited, with shortage foreseen by September. Current prices on processed acid precipitated casein at 30 to 33 cents per pound for domestic grades and 27½ to 28¼ cents for imported grades, f.o.b. shipping point.

Caustic Soda
Liquid supply slightly improved. Dry forms extremely tight. Solid caustic is reported at $3.10 per cwt.; flaked and ground is quoted at $3.50 per cwt. in 400 pound drums, $4 to $4.25 per cwt. in 100 pound drums—car lots at works; liquid 50 percent in tank cars at $2.50 per cwt.; liquid 73 percent in tank cars at $2.60 per cwt., at works.

China Clay
Supply excellent. Demand steady. Domestic filled clay is $9 to $11.50 per ton, car lots; coating clay is $14 to $22. Imported clay quotation, short tons, $16 to $35, export warehouse.

Chlorine
Supply tight. Demand steady. Shortage of tankers aggravates situation. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt., in multi-unit tank cars, f.o.b., works.

Rosin
Domestic and foreign buying dull. Prices dip slightly. Gum rosin in drums per 100 pounds net in car lots, f.o.b. Savannah; B, $6.50; G, $7.25; H, $7.25; I, $7.26; K, $7.28. Wood rosin per 100 pounds net, car lots, f.o.b. Savannah; B, $5.00; FF, $6.50.

Rosin Size
Seventy percent gum and pale wood grades. Supply ample. Demand good. Tank cars, $6.15 to $6.25, f.o.b. southern shipping point.

Salt Cake
Demand continues ahead of supply with slight improvement in shipments. Production under contract. Domestic salt cake quoted at $25 to $28.

Soda Ash
Supply-demand near balance. Deliveries close to schedule. Export likely to expand. Current prices, car lots, per 100 pounds; in bulk, $1.15; in paper bags, $1.40; and in barrels, $1.90.

Sodium Bicarbonate
Strong demand with supply good. Reported as $1.95 per cwt. paper bags, carload lots.

Starch
Prices unchanged. Supply good. Easy demand against contracts. Pearl grade quoted at $7.00 per 100 pounds; powdered starch at $7.12 per 100 pounds; car lots, New York.

Sulphate of Alumina
Demand increased. Supply steady. The commercial grades are quoted at from $1.30 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

Sulphur
Production shows heavy gain. Prices unchanged. Supplies ample. Annual contracts are quoted at $16 to $18 per long ton, f.o.b. mines; the price f.o.b. at Gulf ports is $17.50 to $19.50 per long ton.

Talc
Demand continues far in excess of supply. Prices steady. Domestic grades are currently quoted at $23 per ton in paper sacks, f.o.b. mills; Canadian at $35 and up per ton. All prices in cart lots.

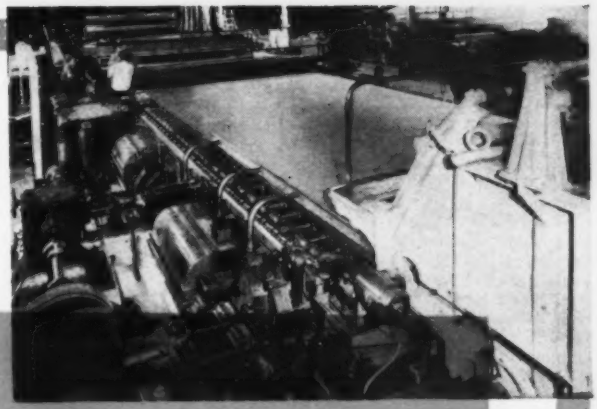
Titanium Dioxide
Supply continues unequal to demand. Shipments on allocation. Anastase 17½-18c pound carload lots, 18-19c l.c.l., rutile, 19½-20c pound carload lots, 20-21c l.c.l.; 50-pound bags, f.o.b. plant, minimum freight allowance.

Exports of Naval Stores Dip

Exports of gums and rosins from the U.S. in May amounted to $2,000,000, a decrease of $200,000 from April export evaluation as announced by the Bureau of the Census. This figure is less than half that of May, 1947, which totaled $4,600,000, and nearly as far behind the 1947 average of $3,900,000.

Imposition of export curbs on rosin and turpentine by the OIT in May were responsible for these dips. Now on the restricted list, exports show some improvement.

Interesting facts about PAPER



In 1798 Louis Robert invented the endless wire screen which is the basis of modern paper making machines. Robert sold his idea to the Fourdrinier brothers, two wealthy Englishmen. They went bankrupt developing it, but today these great machines, used in the paper industry throughout the world, bear their name.

INTERESTING FACTS ABOUT CHRYSOIDINE Y DUSTLESS

CHRYSOIDINE Y DUSTLESS is a popular basic orange, extensively used in coloring kraft, tissue, boxboard, poster, news and catalog papers. It dyes both sized and unsized papers and gives excellent results when used on unbleached fibers.

Your Calco representative will be glad to supply full information on CHRYSOIDINE Y DUSTLESS and the many other colors in the Calco line.

Calco

CALCO CHEMICAL DIVISION
Heller & Merz Department

AMERICAN CYANAMID COMPANY
Bound Brook, New Jersey

New York • Chicago • Boston • Philadelphia • Charlotte • Providence

FINANCIAL RECORD

Preferred Stocks	Per Share 1947	Earnings 12 Mos. to Approx. 6/30/48	Indic. Annual Divid. Rate	Aug. 11 Closing Market Price
Armstrong Cork Co. $3.75 Cum.	$59.74		$3.75	96½
Armstrong Cork Co. $4.00 Cum. Conv.	25.85		4.00	111¾
Celotex Corp. 5% Cum.	24.25c	$25.99f	1.00	19
Champion Paper & Fibre $4.50 Cum.	65.90i		4.50	99
Container Corp. of Amer. 4% Cum.	102.74	88.25	4.00	
Crown Zellerbaah $4.20 Cum	56.40i		4.20	99⅜
Crown Zellerbach $4.00 Cum. Conv. 2nd	211.39i		4.00	109¾
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	9.16	8.59	2.50	
Flintkote Co. $4 Cum.	81.91	80.04h	4.00	
Robert Gair Co. Inc. 6% Cum.	18.01	16.26	1.20	
International Paper Co. $4 Cum.	236.51	243.69g	4.00	
Johns Manville $3.50 Cum.	128.81	134.48	3.50	104
Kimberly Clark Corp. 4½% Cum.	70.03	73.34	4.50	
Kimberly Clark Corp. 4% Cum. Conv. 2nd	95.88	100.73	4.00	96
MacAndrews & Forbes 6% Cum.	62.20	62.56	6.00	
Mead Corp. 4¼% Cum.	81.56	79.88g	4.25	92
Mead Corp. 4% Cum. Conv. 2nd	53.34	31.11g	2.00	
Paraffine Cos. Inc. 4% Cum. Conv.	136.19a	151.93g	4.00	
Rayonier Inc. $2 Cum.	13.58	15.44	2.00	32⅞
St. Regis Paper Co. 4.40% 1st A	76.93	84.43	4.40	89½
Scott Paper Co. $3.40 Cum.	43.95	45.37g	3.40	93
U. S. Gypsum Co. 7% Cum.	211.34	231.37g	7.00	168¼
United Wallpaper Inc. 4% Cum. Conv.	46.06a	11.13g	2.00	
West Virginia Pulp & Paper 4½% Cum.	75.75c	75.44g	4.50	
Common Stocks				
APW Products Co.	$1.24	$1.46	$0.25	5¾
American Writing Paper Corp.	1.61	.47	0.25	
Armstrong Cork Co.	6.41		2.60	50
Celotex Corp.	6.59c	7.08f	1.50	28½
Certain-Teed Prods. Corp.	3.75	3.83g	0.90	15⅞
Champion Paper & Fibre	5.57i		1.50	23½
Congoleum Nairn Co.	4.55	5.12	2.00	32⅝
Container Corp. of America	10.09	8.50	2.00e	34
Crown Zellerbach	6.81i		2.00	29½
Dixie Cup Co.	5.87	5.37	1.00	33½
Dixie Cup Co. A				53
Flintkote Co.	6.27	5.83h	2.50	33¾
Robert Gair Co. Inc.	2.83	2.59	0.40	8
Great Northern Paper Co.	4.56		2.40	39
International Paper Co.	15.02	g	4.00	56¾
Johns-Manville Corp.	3.17	3.28	1.40	35
Kimberly-Clark Corp.	4.29	4.52	1.40	21⅜
MacAndrews & Forbes Co.	3.68	3.70	2.50	
Marathon Corp.	3.39c	3.61f	1.40	
Mead Corp.	7.33	7.10	2.00	18½
National Container Corp.	4.13	3.59g	1.20	11½
Paraffine Cos. Inc.	2.41a	2.39g	1.20	24¼
Rayonier, Inc.	7.30	8.47	1.00	31⅝
Ruberoid Co.	10.88	12.13	2.75	
St. Regis Paper Co.	2.66	2.87	0.60e	11⅜
Scott Paper Co.	3.02	3.13g	2.20	46½
Sutherland Paper Co.	6.87	6.56	2.50	
Taggart Corp.	1.29		0.60	
Union Bag & Paper Corp.	7.93	8.35	3.00	
United Board & Carton	5.11b	4.92f	1.00	11¼
U. S. Gypsum Co.	10.00	10.98g	4.00	98
United Wallpaper	1.46a	0.28g		4⅛
West Virginia Pulp & Paper	11.40c	11.36g	3.00	

(a) Year ended 6/30/47
(b) Year ended 5/30/47
(c) Year ended October 31, 1947
(e) Plus extras
(f) 12 Months to approximately April 30, 1948
(g) Twelve months to approximately 3/31/48
(h) Twelve months to approximately 7/17/48
(i) Year ended April 30, 1948.

Dividends Declared

FORT WAYNE, Ind. — Fort Wayne Corrugated Paper Co. reported net income of $979,484 or $3.02 a share for six months ended, compared with $1,321,207 or $4.08 a share for like period of 1947. Reporting on the company's activities, President H. M. Treen said that supplies of kraft linerboard are beginning to come from Southern Paperboard Corp., the mill jointly owned by Fort Wayne Corrugated Paper Co. and Robert Gair Co. of N.Y. Operation of the mill is now building to rated capacity so that the company's converting plants need no longer rely on linerboard available on the open market.

EASTON, Pa.—Dixie Cup Co. reported net profit of $1,534,267 or $5.37 a common share for fiscal year ended June 30, compared with $1,286,487 or $4.14 a share for the earlier 12 months.

CHICAGO — Eddy Paper Corp. declared a regular quarterly dividend of 25 cents a common share payable Sept. 15 to holders of record Aug. 16.

EAST ANGUS, Que.—Brompton Pulp & Paper Co. Ltd. reported dividend of $1 a share on common stock payable Aug. 11. Earlier dividends were 25 cents a share paid on April 15 and Jan. 15. The company is controlled by St. Lawrence Corp. Ltd.

CHICAGO — Certain-Teed Products Corp. and wholly-owned subsidiaries reported net profit of $3,186,968 or $1.94 per common share for the six months ended June 30, compared with $2,917,123 and $1.78 for like period of 1947. For the quarter ended March 31, net profit totaled $1,549,243 or 94 cents a common share, against $1,407,672 and 86 cents 1947's period.

HOLYOKE, Mass.—American Writing Paper Corp. reported net loss of $32,019 for the six months ended June 30, compared with net profit of $373,627 or $1.04 per common share for the comparable period of 1947. Net loss of $16,364 was reported for the quarter ended June 30, against net profit of $193,702 or 54 cents a share a year ago.

In a report to stockholders, Thomas H. Blodgett, president and chairman of the board, stated that continuing advances in costs of operation and raw materials, notably the recent 10 cents per hour increase to papermakers and other operators, has restricted the current gross profits margin. Modest price increases which became effective in July will partially offset mounting costs.

"This period appears to be a time of readjustment in the fine paper trade," Chairman Blodgett said. "A reduction of inventories is the policy of most purchasers of paper, and the lack of purchases of even normal inventory requirements continues. It is hoped that the sought for return of normalcy in buying may soon return."

St. Lawrence Shares Listed

TORONTO, Ont. — The following securities were posted for trading on the Toronto Stock Exchange on a "when issued" basis on August 4: St. Lawrence Corp., Ltd., new first-preferred shares of $49 par value; new second-preferred shares of $1 par value; new common shares of $1 par value and St. Lawrence Paper Mills Co., Ltd., new first-preferred shares of $99 par value and the new second-preferred shares of $1 par value.

The new proposal of compromise or arrangement between St. Lawrence holders having become effective through the issue of supplementary letters patent dated Aug. 3, 1948, all outstanding "if, as and when issued" transactions in the new first-preferred and new second-preferred shares proposed to be issued pursuant to the old proposal of compromise or arrangement, are automatically cancelled.

One of a series *of messages to help you increase your understanding of business paper advertising, and its effect on your job.*

No matter what you make —you're not making it at a profit !

YOU MAY HAVE the finest product of its kind. Your production set-up may be a miracle of efficiency. Perhaps you've even discovered how to cut your cost-per-unit below that of your closest competition. The fact remains —

You're still not *making* anything at a profit. Because actually, of course, there is no such thing.

Goods can only be *sold* at a profit. And selling them profitably requires the same kind of mechanization that keeps your production costs down.

In the *manufacture of a sale*, for example, there are five basic operations —

1. Seeking out prospects
2. Arousing their interest
3. Creating a preference for your product
4. Making a specific proposal
5. Closing the order

Any good salesman can handle all five. But no salesman should *have* to — not when the first three can be mechanized so economically through the use of advertising.

For good advertising, like the machine on your production line, is a multiplier of individual effort, enabling all of us to produce (and *earn*) far more than we could alone.

And when it goes to work in *business papers* — with their tremendous concentration of hand-picked prospects — advertising becomes the most efficient machine available for manufacturing sales at a profit!

PAPER TRADE JOURNAL

is a member of The Associated Business Papers, who have published an interesting folder entitled, "10 ways to measure advertising effectiveness." We'll be glad to send you a copy. And if you'd like reprints of this advertisement (or the entire series) to pass along to others in your organization, just say the word.

JOSEPH E. CONNELL

—transferred by the Nopco Chemical Co., Harrison, N. J., from the New England territory to the West Coast . . . Mr. Connell, who has been with the company for more than 12 years, will sell his company's industrial processing chemicals and the metallic soaps of its subsidiary, the Metasap Chemical Co., in Washington, Oregon and Northern California.

Cellulose Fibres Equipment In

HOLYOKE, Mass.—The first shipment of heavy equipment for the furnishing of the Cellulose Fibres, Inc., at 549 Main street, arrived from the Osborne Paper Mill Supply Co., of Fulton, N.Y., on August 5. It was a washer beater, weighing over 30 tons, and said to be one of the largest in the country.

Its placement in the mill was supervised by Robert W. Pattison, president and general manager, and Joseph H. Barowsky, treasurer of the Cellulose firm.

The new industry has been getting minor pieces of equipment in for the past few weeks and now the Osborne firm is ready, according to Mr. Pattison, to supply the remainder of the heavy and more costly machinery. By the middle of September, production is expected to be underway.

Cellulose Fibers, Inc., will presently occupy more than 70,000 square feet of floor space in the building. The main part of the plant will be in the cellar and four stories of the building. In addition the company has contracted for a two-store warehouse along nearby railroad tracks.

The new industry will deal in cotton pulp for paper mill consumption. This product can either be added to wood pulp, or used by itself to minimize, and in some cases even eliminate, rag preparation in papermaking mills. Only raw cotton waste, secured from domestic and foreign sources, will be used in the company's processing.

OBITUARY

George C. Ferver

George C. Ferver, 47, vice-president in charge of manufacturing of the Package Machinery Co., East Longmeadow, Mass., died on August 6. He had been suffering from leukemia for some time. Mr. Ferver joined the firm in November, 1939, as assistant to the treasurer. After a period of six years in that job, he became vice-president in charge of manufacturing on Nov. 14, 1945. Previously he was a representative of the Truscott Steel Co., in Europe and Asia, and later was associated with the Firestone Tire & Rubber Co.

James N. Lister

James N. Lister, 49, superintendent of the Mt. Tom Division of the American Writing Paper Corp., died on July 29 at the Holyoke Hospital. Born in England, Mr. Lister came to the United States as a child. He was with the American Writing Paper Corp. for 30 years.

Robert D. Moore

Robert D. Moore, 39, representing the Westfield River Paper Co. of Russell, Mass., in its West Coast organization, died of a heart attack in San Francisco on July 23. He was a brother of Paul F. Moore, president of the firm. Surviving Mr. Moore, in addition to his brother, are two sons, Geoffrey D. Moore, 9, and Frank L. Moore, 7; his mother, Mrs. Mabel Bachman Moore; and a sister, Mrs. George D. (Louise E.) Gilbert.

Paul E. Pettus

Paul E. Pettus, 59, associated with the Luther C. Jeffress Co., Richmond, Va., died of a heart attack at Hotel Chamberlain, Old Point Comfort, Va., on July 24. For the past 25 years Mr. Pettus represented the Wortendyke Mfg. Co., Seminole Paper Corp., and the Crunden-Martin Co. He was a charter member and former officer of the Richmond Sales Representatives Ass'n. Surviving Mr. Pettus is his widow, Mrs. Alma Robinson Pettus.

Donald A. Morrison

Donald A. Morrison, 46, northeastern sales representative of the Great Northern Paper Co., died in Greenwich (Conn.) Hospital, following a brief illness. He was with the firm since 1934. Surviving Mr. Morrison are his widow, Mrs. Isabelle Jeffcott Morrison; two daughters, Elizabeth and Martha, and a son, Donald A. Morrison, Jr.

Container Labs' 25th Year

CHICAGO — Container Laboratories, Inc., is observing its 25th anniversary this month. The company maintains laboratories here and in New York and San Francisco and field offices in Los Angeles and Milwaukee.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1948		Corresponding Weeks—1947	
June 26	99.8	June 28	103.7
July 3	91.3	July 5	62.7
July 10	62.3	July 12	93.5
July 17	87.1	July 19	102.8
July 24	103.1	July 26	106.1
July 31	*98.8*	Aug. 2	103.9

COMPARATIVE MONTHLY SUMMARIES

1947						1948	
Jan.	102.1	May	106.2	Oct.	109.5	Jan.	‡100.3
Feb.	105.9	June	106.0	Nov.	109.3	Feb.	‡99.3
Mar.	106.1	July	93.5	Dec.	101.5	Mar.	‡100.3
Apr.	105.1	Aug.	104.2			Apr.	‡100.8
		Sept.	102.0	Year Avg.	104.3	May	‡100.4
						June	94.5
						July	*88.1*

‡ Final Production.

COMPARATIVE YEARLY SUMMARIES

	1941	1942	1943	1944	1945	1946	1947	1948
Year to Date	93.8	94.8	87.8	87.8	88.1	99.5	103.6	97.6
Year Average	97.4	90.4	87.8	88.1	89.4	101.1	104.3	

PAPERBOARD OPERATING RATIOS†

Current Weeks—1948		Corresponding Weeks—1947	
June 26	97	June 28	102
July 3	89	July 5	78
July 10	56	July 12	76
July 17	84	July 19	97
July 24	91	July 26	99
July 31	*92*	Aug. 2	99

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1947	99	103	101	100	101	101	90	99	96	101	99	89	98
1948	99	100	102	102	100	94	*81*						

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

INDUSTRIAL DEVELOPMENT

Hankins' Corrugating Plant Union, N. J., Showplace

By E. P. McGinn

In January of this year the Hankins Container Co. began operations in its newest and most modern plant at 601 Lehigh avenue, Union, N. J. Located in a pleasant rural atmosphere, it is only about five miles from the center of Newark and less than 15 miles from New York City. In this plant the company manufactures corrugated paper shipping cases and special packaging for incandescent lamps, employing 250 persons.

The building, which has no windows, is 400 feet long by 300 feet wide, containing 120,000 square feet of manufacturing space. The offices, locker rooms, showers and cafeteria are along the front side of the building and do not interfere with the manufacturing space. Light is admitted through a four foot wide strip of glass brick which completely encircles the building near the roof. The office is completely air conditioned, including a refrigeration system. The rest of the building is air conditioned but not cooled.

Indoor truck platforms and railroad siding allow loading and unloading of freight cars and trucks to continue at full efficiency in any kind of weather.

Although not considered unusual in the container industry, paper makers may be interested in the fact that all of the kraft liner board is stored outside during the entire year with no protection against the weather. The Hankins company has found, by experience, the except for the first two or three outer layers on each roll, which are usually discarded anyhow, the paper remains unaffected by snow, rain, ice or sunshine. This is true only of kraft liner. Corrugating paper and jute liner must be stored inside to avoid damage.

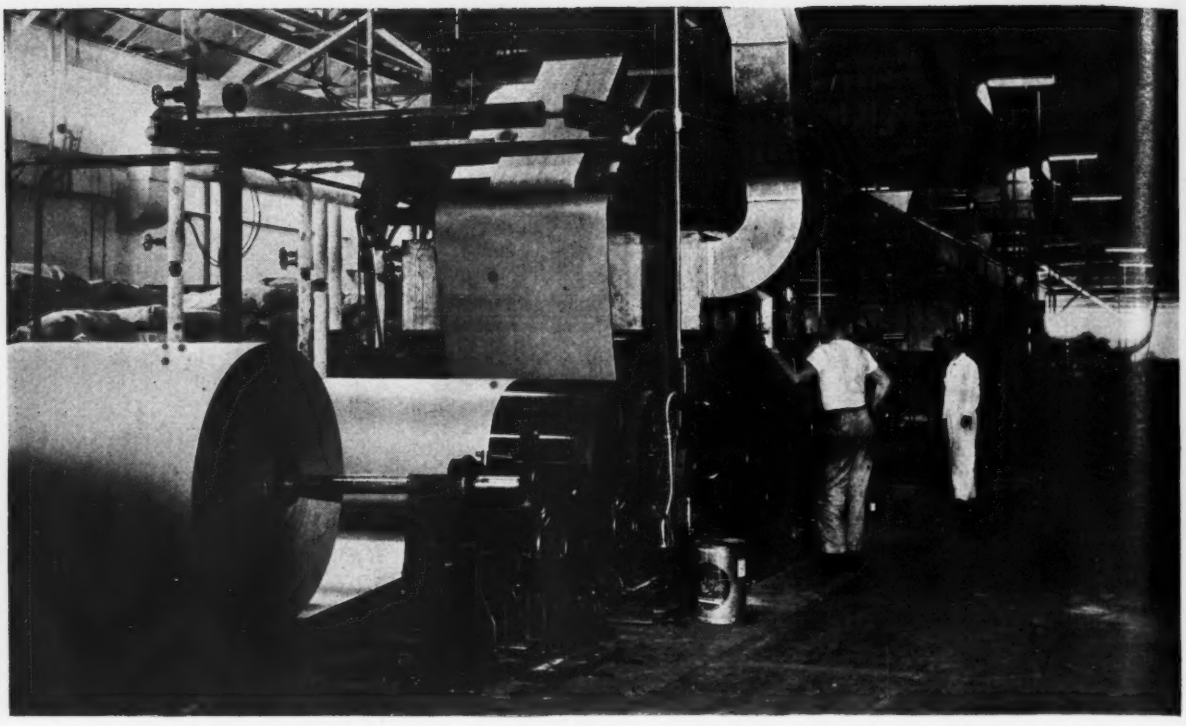
W. L. DAVIS
Vice-President, General Manager
Eastern Operations
Hankins Container Co.

Stein-Hall adhesive system.

The founder of this organization, E. R. Hankins, is also one of the founders of the Container Corp. of America. In 1914, Mr. Hankins and Paul Brunt formed the Mid-West Box Co. at Anderson, Ind. In the mid-twenties that company merged wtih the Chicago Mill & Lumber Co. to form the Container Corp. of America, of which Mr. Hankins was vice-president for several years. In 1933, both Mr. Hankins and Mr. Brunt separated from the Container Corp. of America, the former purchasing its Cleveland plant and the

INDUSTRIAL DEVELOPMENT

Paper Trade Journal, in this section, makes space available for discussion of administrative and operating problems. Space is also available for the presentation of independent studies and research on technical and engineering subjects. Feature stories of paper mills, converting plants and inter-related industries will be included. An invitation is cordially extended to all who are qualified to discuss these subjects. Original manuscripts submitted exclusively to Paper Trade Journal and found suitable for use in this section will be paid for immediately upon acceptance. Submit manuscripts to E. P. McGinn, Industrial Editor.



Langston and Swift corrugating units showing roll of corrugating paper and preheater in foreground.

latter building a plant in Chicago.

In 1936 the Hankins Container Co. started its eastern plant in Elizabeth, N. J., and in 1943 bought another unit it Miamisburg, Ohio. In 1947, at the death of Mr. Brunt, the Brunt Container Co. of Chicago was added to the rapidly growing organization.

Meanwhile, to insure continuing supplies of raw material, the Munroe Falls Paper Co., Munroe Falls, Ohio, and the Lake Erie Pulp & Paper Co., Monroe, Mich., were purchased. A new paper mill is now being built at Hartsville, S. C., under joint ownership of the Sonoco Products Co., Hankins Container Co., and Ohio Boxboard Co. The latter two companies will use the entire output of corrugating stock from the new mill.

Manufacture of corrugated boxes at the new plant in Union is typical of the most modern methods used in this industry.

For combining the corrugated sheet to the liners, Hankins uses a highly efficient adhesive which was developed by the Stein-Hall Co. This system allows the use of starch on the modern high-speed machines, most of which were designed for use with silicate adhesives. Although cooked starches were used on the first corrugating machine, they were quickly displaced by sodium silicate as the machines were made to run faster. In the years that followed, silicate adhesives were used almost exclusively for this job.

In 1934 Jordan Bauer, a Stein-Hall chemist, conceived the idea which led to the development of the Stein-Hall process for bonding corrugated board. The basic principle is quite simple. A rather dilute emulsion of gelatinized starch is used as a carrier for a larger quantity of raw starch that is gelatinized after it has been applied to the tips of the corrugation flutes. To produce this effect it is necessary to preheat both corrugating and liner paper and then to bring the paper and alhesive to the gelatinization temperature. Since the natural jelling temperatures of most starches are too high to be easily attained on the corrugating machine it is necessary to reduce and control the jell point by the use of caustic soda or other chemicals. Experience has shown that 145°F. is the best temperature for gelatinization and suitable amounts of caustic soda and borax are used to reduce the gelatinization temperature to this point. The reasons for using borax are: (1) it raises the viscosity and increases the fluidity of the carrier portion of the starch and (2) it acts on the raw portion of the starch to make the swelling more sudden and complete when gelatinization takes place.

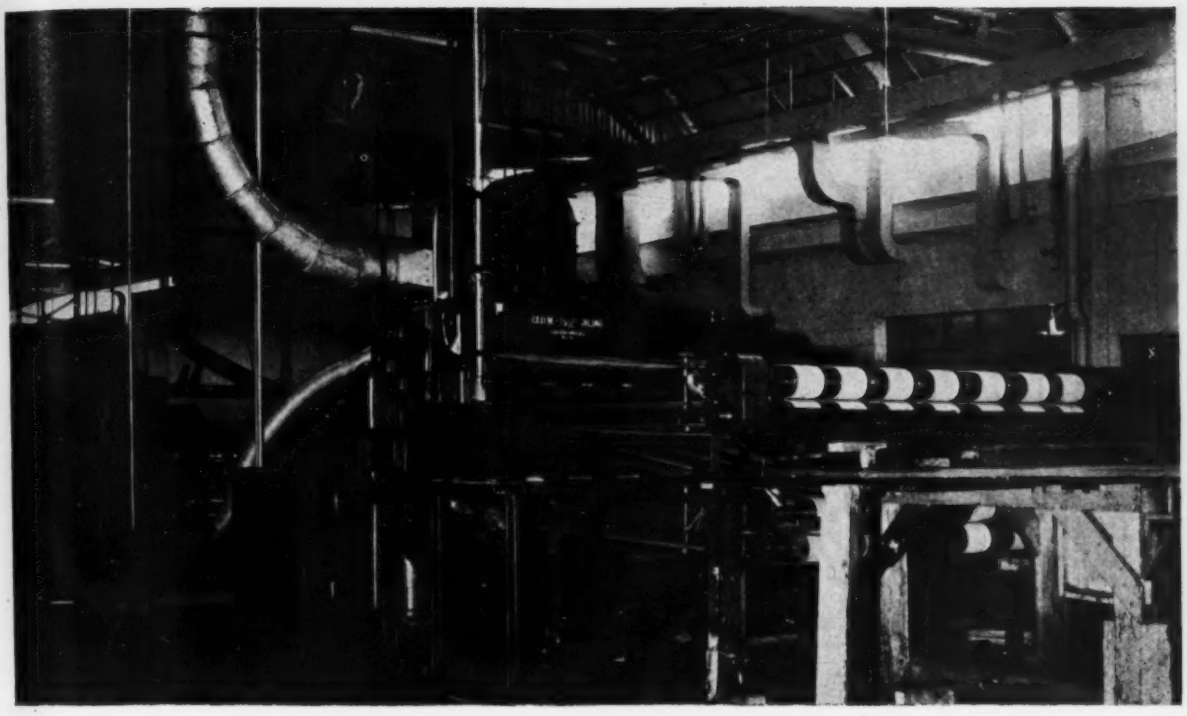
A small amount of bentonite is usually added to the mixture to assist in holding the raw starch in suspension.

Other ingredients commonly used in the adhesive mixture are sulphonated oils, and preservatives such as formaldehyde or chlorinated phenols.

After many experiments an excellent mixing unit has been designed and manufactured by the Henry Pratt Co., Chicago. This equipment is manufactured in two sizes for different size cor-

TABLE I

Weatherproof	*Non-Weatherproof*
UPPER TANK	**UPPER TANK**
1200 lbs. of water	800 lbs. water
3 lbs. caustic soda	160 lbs. starch
200 lbs. starch	34 lbs. caustic soda dissolved in
Heat to 160°F. for 15 min.	50 lbs. of water
	Heat to 160°F. for 15 min.
	1000 lbs. cold water
LOWER TANK	**LOWER TANK**
1,660 lbs. cold water	3,040 lbs. cold water
1,332 lbs. starch	20 lbs. bentonite
disperse thoroughly. Drop carrier slowly from upper tank. Mix well.	mix thoroughly
120 lbs. Urea formaldehyde resin (70% solids). Dissolve 132 lbs. of aluminum sulphate in the minimum quantity of water and add to above mixture with thorough agitation.	34 lbs. borax mix until dissolved
	1,010 lbs. starch mix until thoroughly dispersed
2 lbs. sodium pentachlor-phenate or other preservative.	Drop carrier solution slowly from upper tank agitate until correct viscosity is obtained.
2 qts. sulphonated castor oil (50%)	qts. formaldehyde or
	2 lbs. sodium pentachlorphenate
	2 qts. sulphonated castor oil ((50%)



Slitter and cut-off end of corrugating and combining machine.

rugating plants. The smaller unit makes a batch of 333 gallons and has two storage tanks holding 1,000 gallons each. The larger unit is twice the size of the smaller unit in mixing quantity and storage capacity.

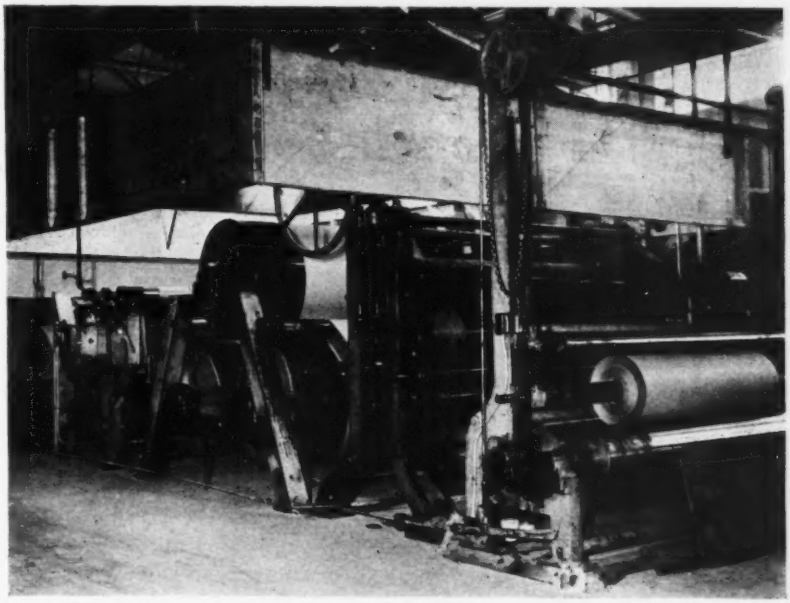
At Hankins the larger size unit is used. The equipment consists of an upper mixer and a lower or secondary mixer and two large storage tanks.

The upper mixer holds 232 gallons and is equipped with an agitator having two sets of mixing blades revolving in opposite directions. This mixer is used to make the carrier portion of the batch. The lower mixer is provided with a horizontal shaft on which are mounted four propellers that rotate at 400 RPM. The two propellers on one side of the shaft are pitched opposite to those on the other side and are so arranged that the mixture is constantly forced towards the center. This mixer is used to blend the raw starch into the carrier emulsion. The unit is equipped with two pumps which may be used interchangeably. The pumps are used to transfer the mixture from the lower mixer to the storage tanks or from one tank to another or from either storage tank to the corrugator.

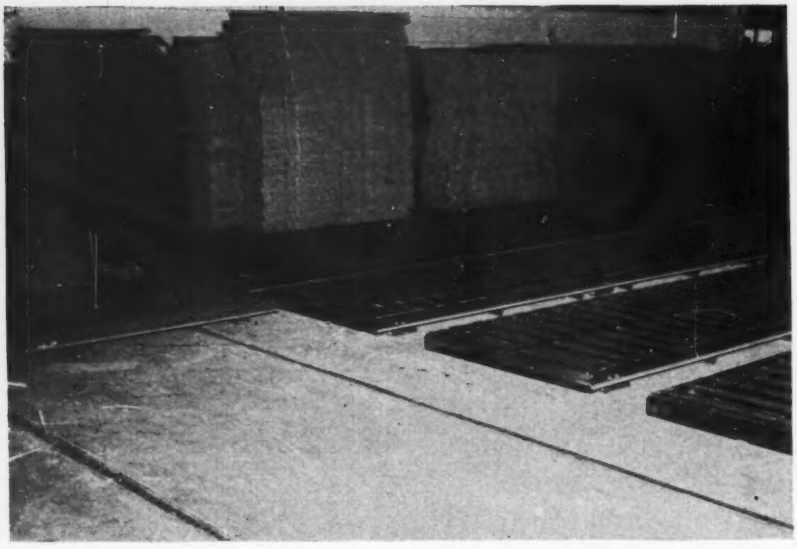
The formulas shown in Table I are used for weatherproof and non-weatherproof types of adhesive.

The first unit in the fabrication process is the corrugating machine. This particular machine is composed of one "C" flute corrugator, a "B" flute corrugator, a hotpress section for drying the adhesive and a cold press section for setting it. This machine takes paper up to 78 inches in width and will fabricate either double or single lined singe corrugated board or double or triple lined double corrugated board in any desired length. The maximum speed is 375 feet per minute. The B flute corrugations are 1/8" high and the C flute corrugations are 5/32" high. The B flute corrugator was supplied by the Langston Co., and the C flute machine is a product of the George Swift Co.

Both kraft and semi-chemical chestnut .009 papers are used for corrugating. The sheet passes over a preheater before being put through the corrugating rolls. After being corrugated the sheet remains slack, being carried along in loose folds until it passes over an adhesive applicator roll and is then combined with the first liner. The liner stock is also pre-heated before the adhesive is applied and it is then combined with the corrugated sheet. The second liner, when used, is



Laminating machine.



Part of Logan conveyor system, showing method of switching from line to line.

applied in the same manner as the first.

All of the pre-heaters are so designed that they may be rotated with a peripheral speed the same as that of the paper or they may be held stationary. The latter method is used to eliminate any tendency of the paper to wrinkle although it increases the power consumption. Steam at 175# pressure is used to heat the pre-heaters and provide the proper surface temperature.

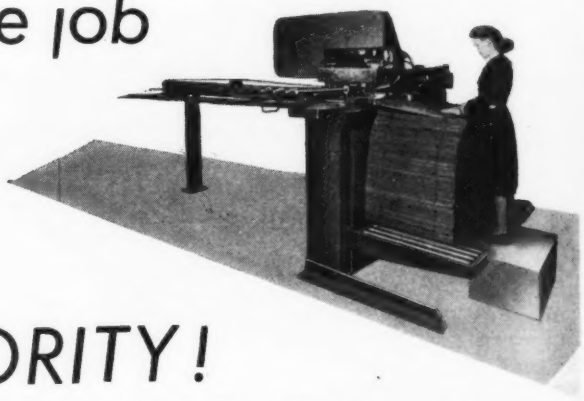
The combined board then goes to the hot section where it passes over heated steel plates, being held in position by a heavy belt of fabric similar to that of paper machine drier felts. This belt is on top of the board and holds it down close to the hot surface. A number of small rollers on top of the belt exert a slight pressure to help keep the board flat. At the end of the hot section the board is picked up by another belt on the underside and is allowed to cool and set while being carried along between the two belts. The machine is equipped with a double cut-off which allows the finished sheet of corrugated board to be cut into two different lengths simultaneously.

As they come from the machine the sheets of corrugated board are stacked on pallets for transport on the conveyor system. These pallets are all two feet wide and are made in three different lengths, four five and six feet respectively. Before the war these pallets were made of wood but in this new plant, 1/8″ thick magnesium plates, supplied by Magline, Inc., Pinconning, Mich., are used exclusively for this purpose.

One of the unique features of this plant is the conveyor system, which was supplied by Logan Mfg. Co., and consists of 2,500 feet of roller conveyors 52″ wide. Each aisle, which runs at a right angle to the main system of conveyor tracks, has a portable connecting track which is easily moved along the aisle to connect one track with any other. The stacks of sheets of corrugated board of various sizes are moved along these conveyor tracks to the next operation in the process which may be a slitter or a combination printer, scorer and slotter. There is one slitter made by Progressive Ma-

100 . . . on the job

PROVE Universal's SUPERIORITY!



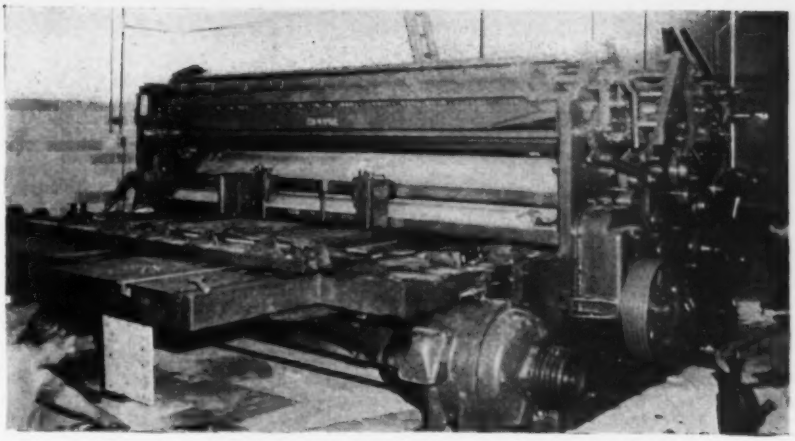
The proof of superiority is "On-The-Job" performance. More than 100 Universal Open Throat Semi-Automatic Tapers are now setting production records for leading boxmakers from coast to coast—and at savings of 40% on finishing costs. You owe it to yourself to investigate the machine which users consistently label "The Finest On The Market Today".

ALSO ON THE JOB AT HANKINS CONTAINER COMPANY

Universal CORRUGATED BOX MACHINERY CORP.
LINDEN, NEW JERSEY

chine Co., Brooklyn, N. Y., which is used to cut the large corrugated sheets into smaller pieces for making pads, liners and partitions. There are three of the printing, scoring, slotting machines, all made by the F. X. Hooper Co., Glenarm, Md. The maximum sheet sizes which these machines will handle are as follows: 52" by 100"; 32" by 72"; 60" by 140". The latter machine is new and is just being put into operation. As the name implies, these machines print the advertising design or name on the sheet, score it and cut out slots of the proper size and position so that when the sheet is folded on the scorings the correct size box is formed. The most important part of the operation of these machines is the initial adjustments that must be made for each size box and each different printing design. Once these adjustments have been completed the operation is simple and the production rates are high.

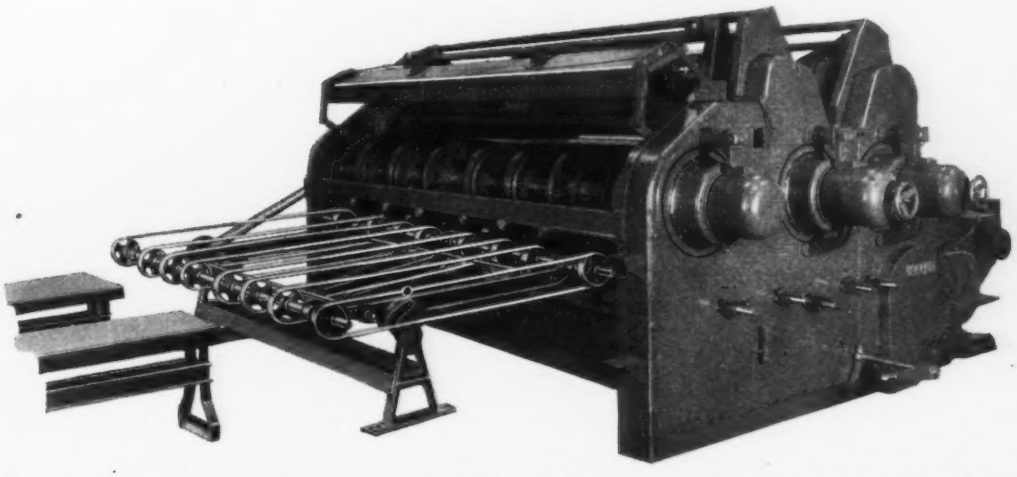
The sheet of container stock has now become a box blank and only two more operations are required to transform it into a flat box ready for shipment. These operations are, first, folding, and then either taping or stitching. The folding operation consists of bending the box at two of the scorings and bringing the outer edges in to form a joint which is then taped or stitched. A butt joint is used for taping, but for stitching, an overlaping stitch flap is used. The stitching staples are fastened through this flap. Originally all of these operations were manual but in modern plants a high percentage of the folding and taping are performed automatically on a single machine. However, the range of box sizes which these automatic machines can fold is not very great so it is necessary to have several different sizes of automatic machines or have one size which will take the largest proportion of box sizes and supplement this with semi-automatic machines for use with odd sizes. Very good results have been obtained with the Universal semi-automatic taper and the Langston-Bowee automatic machine.



The newest and largest printer, scorer, slotter, supplied by F. X. Hooper Co.

After the taping or stitching operation most of the boxes are ready for shipment although a small percentage are completely set up for use locally.

Many of the boxes must be equipped with liners, pads and/or partitions, all of which are made from corrugated sheets similar to those used for the boxes. The liner boards used for pads, etc., are usually of lighter weights than



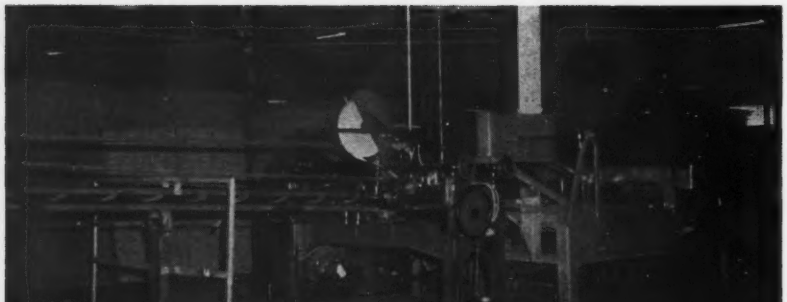
The above Hooper Printer-Slotter, Standard Deluxe Model, 60x140" size is one of the three Hoopers at the Union, N. J. plant of the Hankins Container Company. (See article page 45 of this magaizne). In addition the Hankins Company also operates Hooper Partition Slotter and Stacker Delivery.

This 60x140" Printer-Slotter is the largest size of its kind, automatically fed. Fully proved and tested in the industry for the past six years, incorporating the latest improvements, this Hooper has shown its leadership by actual profitable performance—big in design—big in output.

GET ALL THE FACTS—AND YOU'LL GET A HOOPER

MORE THAN HALF A CENTURY OF EXPERIENCE—THE OLDEST IN THE INDUSTRY

F. X. HOOPER COMPANY, INC. • GLENARM, MARYLAND—SINCE 1882



those used for boxes. The pads are used in the top or bottom of the box and the liners are used to line the inner sidewalls. The partitions are used to separate individual items packed in a box. Making the pads consists merely of cutting the combined corrugated sheet to the proper size. The liners require an additional scoring operation and the partition blanks must be slotted. Here again, for local use, some of the partitions are set up and placed in the boxes with liners and pads.

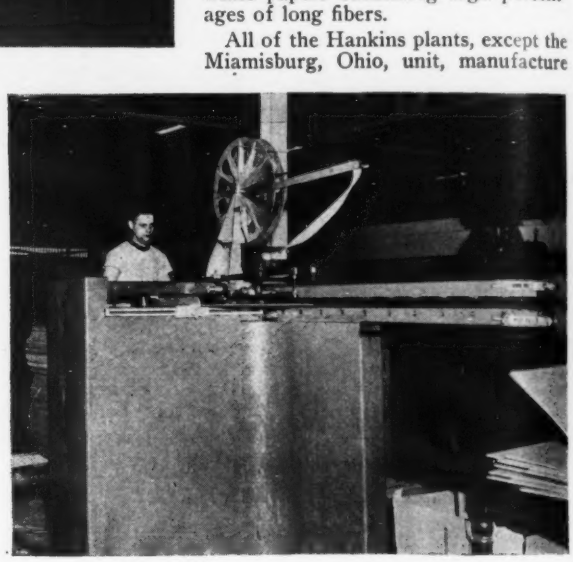
Specialties

In addition to the standard corrugated containers, several special items, such as advertising displays, tuck flap boxes and spacers are made for various purposes. Many of these require odd-shaped pieces which must be die cut. Four die cutters are available for this work. Three of these are Thompson hand-fed machines of which two are 33″ x 47″ and the third is 42″ x 48″. The other machine is a Sheridan which has a maximum cutting size of 48″ x 78″. These machines allow the manufacture of almost any shape of blank necessary for the uses mentioned.

Other auxiliary equipment which is of considerable value in making material for advertising displays includes a laminating machine which combines two sheets of any stock up to .030 thickness and 76 inches in width. This machine was designed by Hankins' engineers and consists of adhesive applicator rolls, press rolls, three drier rolls and a winder. Another auxiliary machine is a coater which is used to apply surface coloring. The latter is housed in a vapor-tight compartment equipped with draft fans to remove the fumes and steam.

ABOVE:
Langston-Bowee automatic folder taper.

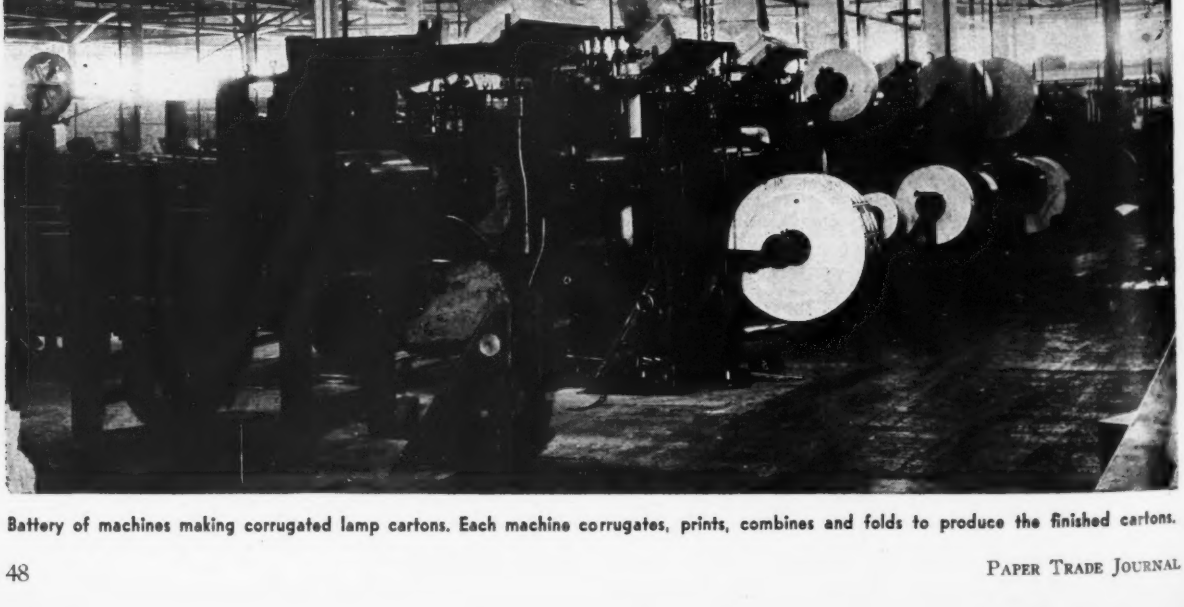
RIGHT: →
Universal semi-automatic taper.



Lamp Carton Department

One of the most important parts of the operation in this plant is the manufacture of lamp cartons. These are made of single lined corrugated stock formed into the shape of a rectangular parallelepiped with open ends. Although the liner and corrugating stock are of different grades, both are strong white papers containing high percentages of long fibers.

All of the Hankins plants, except the Miamisburg, Ohio, unit, manufacture lamp cartons. The machines for manufacturing these cartons are fed with rolls of liner and corrugating paper of varying widths, depending on the size of cartons being made. The liner stock is printed with the customer's advertising design in one or two colors. Meanwhile the other sheet is fed through the corrugator and the two are immed-



Battery of machines making corrugated lamp cartons. Each machine corrugates, prints, combines and folds to produce the finished cartons.

iately combined with adhesive. The combined sheet is then slit, scored, folded and the ends glued to form the carton and then cut off to the proper length. The cartons are packed flat for shipping.

Employe Relations

An interesting feature of the Hankins Co. is the employer-employe relationship. During the 14 years the company has been operating there has never been a strike or shut down due to disagreement between the management and its employs. The policy of th Hankins management is to provide better products and services to its customers by having better facilities and equipment operated by better-satisfied employes.

ABOVE: Enclosed truck platform.

LEFT: Enclosed railroar siding and loading platform.

BELOW: Hankins Container Co. as seen from air.

A study of the benefits and privileges provided for the firm's employes shows the extent of the efforts made by the Hankins management to maintain a contented working force.

Security Plan

First, the management has taken every precaution to insure continuous, steady work to its employes by producing goods that the customers can use at prices they can afford to pay. Next, a "security plan" insures employes against loss of pay due to shutdown caused by conditions beyond the control of the company such as, power failures, coal or transportation strikes or tie-ups, supplier shutdowns. This "security plan" also provides pensions for employes who have reached the age of 65.

Security Plan Fund

The funds for these benefits are obtained by placing a percentage of the net profits before dividends, in trust, for the exclusive use of the Security Fund. To obtain these benefits the employes are not required to make any financial contribution to the fund but must put forth some effort to accumulate "security points."

The amount of participation by each employe in these benefits is determined by the number of these security points which he has been able to accumulate. These points are earned as follows: Two points for each year of service; four points for each month of perfect attendance or two points if absent only one day during the month. Two points for each month of perfect punctuality or one point if tardy only one day during the month.

Security Group

To be a member of the Security Group an employe must have a total of 70 points or be among the top two thirds of employes in number of points accumulated. Thus any employe after a year's service may, by a little effort, become a member of the Security Group.

Christmas Bonus

After becoming a member of this group it is still highly advantageous for an employe to accumulate additional points since the amount of Christmas Bonus which any employe may receive is proportional to the total number of points he has earned. The amount of this Christmas Bonus is determined by taking ten percent of the total payroll and deducting from this the amount paid for State and Federal Social Security, old age pensions, workmen's compensation insurance, vacation and holiday pay, group insurance, etc. The balance constitutes the Christmas Bonus Fund. The amount each employe receives is determined by his yearly pay and number of security points. It is of course dependent on the size of the bonus fund.

Group Insurance

After one full year of employment beginning either June 1 or December 1 each employe receives a $1,000 policy

of free group insurance plus a sickness and accident benefit policy which amounts to ten dollars per week.

Holidays & Vacations

Employes receive six paid holidays during the year as well as vacations with pay. The plants close for one week, usually during July. All hourly employes who have been with the company from three to 12 months receive graduated partial pay for this week and those with more than one year of service receive full pay for the week. Additional vacation pay is received for each year of service up to five years, when a full extra week of vacation pay is received.

Welfare Advisory Board

All interpretations, amendments and administration of the Security Plan are handled by a welfare advisory board upon which the hourly workers have equal representation with the stockholders. This board meets every three months. Since all decisions or changes must be by majority vote, no changes may be made against the wishes of the hourly workers' representatives.

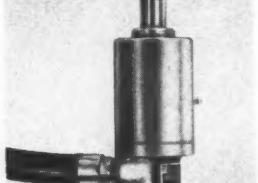
Any employe who believes he has been treated unfairly may take his complaint to the hourly workers representative of the welfare advisory board who may then confer with the stockholders representative. If they agree on some action the matter will be closed. If no agreement is reached, the dispute will be presented to the welfare advisory board at its next regular meeting.

There is little doubt that the sound planning and progressive attitude of the Hankins management has paid off in rapid and steady growth which has raised the production volume to the upper five percent among the more than 300 manufacturers in the industry.

EQUIPMENT AND SUPPLIES

Three-In-One Rotating Union

The Deublin 3-in-1 Rotating Union, for use in heating or cooling revolving shafts, cylinders or drums from —30° F. to 300° F. has proven efficient in the handling of steam, air or liquids, it is stated. Design includes features to prevent leakage, resist corrosion, reduce friction and also to permit simple maintenance. Lubrication is of the purge type, and grease is held where needed by a system of pockets. The two types of Dublin unions are interchangeable, the Monoflow for introduction of the cooling or heating medium into one side of the cylinder or shaft, and the Duoflow for introducing and withdrawing the cooling or heating medium from the same side of the revolving cylinder or shaft. One may be changed into the other without removing the union from the installation. Unions are available in four standard iron pipe sizes, ½", ¾", 1" and 1½". Special specifications quoted on request. For details and prices write to Deublin Co., Northbrook, Ill.



Traffic-Tred

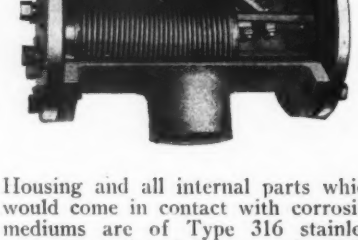
Traffic-Tred is an abrasive floor coating which is applied like paint to produce a hard, rough surface with a texture much like coarse sandpaper. It is said to work equally well on steel, wood or concrete, and to remove most of the danger from walking areas subject to dampness, greasiness and other hazards. For details and prices write to Industrial Safety Products Div., Watson-Standard Co., 225 Galveston Avenue, Pittsburgh 30, Pa.

Wound-Rotor Motor

Wound-rotor motor (LifeLine) is of open drip-proof construction. Available in ratings of 1 to 15 h.p. (Frames 203 through 326.) Type CWP may be used wherever adjustable speed is required or where high-starting torque with low-starting current is necessary. Especially designed for driving compressors, plunger pumps, positive pressure blowers or for bringing heavy loads up to speed. For details and prices write to Westinghouse Electric Corp., P.O. Box 868, Pittsburgh 30, Pa.

Stainless Steel Aneroid Manometer

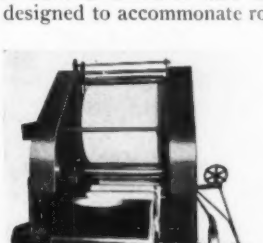
The Stainless Steel Aneroid Manometer was developed for measuring and controlling flow, liquid level or specific gravity of applications which involve caustics or difficult acids such as sulphuric, acetic, nitric or phosphoric.



Housing and all internal parts which would come in contact with corrosive mediums are of Type 316 stainless steel. So designed that corrosive fluids can be introduced directly into the manometer, making sealing fluids or purges unnecessary. This mercuryless manometer is available in ranges of 20, 50, 100 and 200 inches of water differential with body pressure rating of 300 p.s.i. For details and prices write Taylor Instrument Co., P. O. Box 110, Rochester 1, N. Y.

Hi-Speed Spooler

Hi-Speed Spooler has been developed especially for slitting, trimming and rewinding paper and laminated foil from 10 lb. tissue up to 10-pt. board. Special rewind mandrel and inwind stand designed to accommonate rolls 2" to 40" O.D., and multiple width cuts from a minimum of 2" upwards. Special designs in 16" to 120" widths. For details and prices write to W. S. Kimbell, 417-19 S. Eighth Street, Louisville, 3, Ky.



IPI Match-Box

IPI Match-Box gives the printer everything he needs to mix and match over 100 colors in one durable package. Contains 11 tubes of inks and compounds, patented mixing and measuring slabs, two mixing knives, tube rolling keys, six special tube caps, instruction book and simplified colormatching chart.

For details and prices write International Printing Ink, 350 Fifth Avenue, New York 1, N. Y.

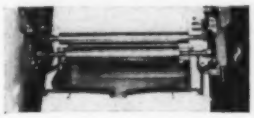
(Continued on page 51)

EQUIPMENT AND SUPPLIES

(Continued from page 50)

Stainless Steel Color Pan

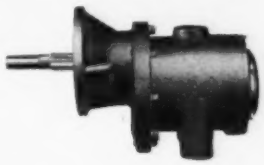
The Modern Color Pan Unit was developed to eliminate the need for removing the pan or color roll for draining and cleaning. For use on wall paper and other surface printing machines. Complete assembly includes



stainless steel color pan, supporting arm and color roll with longer journals. Illustration shows pan in tilted position for quick draining and cleaning. Designed for installation on same brackets as present wooden equipment. For details and prices write to John Waldron Corp., New Brunswick, N. J.

Ingersoll-Rand Air Motors

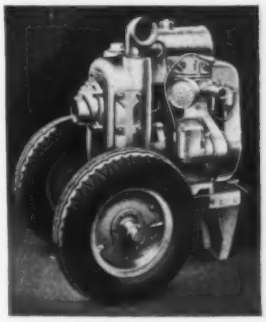
Air Motors are now being produced by Ingersoll-Rand Co. in two sizes as starters for internal combustion engines. The air motor is keyed or splined to the starting mechanism and the engine cranked in the same manner as an automobile engine is turned over when using the electric starter. Known as Size 9BM and Size 20BM, having 9 h.p. and 20 h.p. at 90 p.s.i. air pressure, respectively, the motors are small and compact having overall length of



13-3/16" and 14½". A single step spur gearing is used to obtain suitable speeds. For details and prices write to Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Jaeger Two-Inch Portable Pressure Pump

The Jaeger Two-Inch Portable Pressure Pump is designed to provide a portable outfit that will supply water under adequate pressure for fire protection, irrigation and other pumping operations. Built of aluminum alloy to be salt-water resistant, weighs 150 lbs., complete with engine, towing pole and pneumatic tires. Is said to embody two independent but simultaneous priming actions, both automatic. Recommended



for service where surface water supply is available. For details and prices write to Jaeger Machine Co., Columbus 16, Ohio.

Duramite pH

Duramite pH is a plastic resin finish characterized by resistance to substances which readily attack normal paints such as caustic soda, strong acids, red oil, etc. Adhesion is reputed to be maintained over a wide range of temperatures. Available in a range of decorative or identifying colors. For details and prices, write to Morton Chemical Co., Greensboro, N. C.

LITERATURE

Duriron Co., Inc., Dayton 1, Ohio. Bulletin, "Chlorimet." Provides data on Chlorimet-2 and Chlorimet-3 not previously available, with particular attention to their use for sulfurie acid, hydrochloric acid and salt solutions. Includes charts on corrosion resistance tests for 120 corrosives.

Elliott Co., Jeannette, Pa. Bulletin, "Type F Sudface Condensers." Includes data on condensate pumps, steam jet ejectors, duplex drainers, air leakage meters, also a pressure-temperature conversion table, chart for determining logarithmic mean temperature difference, and condenser formulae.

Eutectic Welding Alloys Corp., 40 Worth street, New York 13, N. Y. Bulletin, "The Eutectic Welder," May-June issue. Explains in non-technical language how Eutectic low temperature welding alloys compare with welding and brazing processes. Also featured is the cutting electrode, Cuttrode, and instructions for use of the welding alloys described.

International Nickel Co., Inc., 67 Wall street, New York 5, N. Y. Booklet, "One Metal Roof . . . For the Life of Your Building." Tells how smoke, fumes and other corrosive agents produced by many industrial plants attack roofs. Provides data on a soft-temper Monel roofing sheet.

KSM Products, Inc., 6512 Park avenue, Merchantville, N. J. Bulletin, P-7, "Arc Welding Studs." Standard studs are described, design and constructions details are shown. Also included are chemical analysis and physical properties of steel used, fluxing method employed, minimum fillet diameters and thread strength. Special studs without threads, large sizes, welding pads, headed studs, and others with S. A. E. threads are illustrated and discussed.

Liquid Dept., Chemical Div., Borden Co., 350 Madison avenue, New York 17, N. Y. Bulletin "Casco Packaging Glues." Describes industrial uses of Borden glues for case sealing, labeling, sealing waterproof papers, case liners and overcoating of labels. Gives complete technical data on products manufactured by this division of Borden Co.

Milton Roy Co., 1300 E. Mermaid lane, Chestnut Hill, Philadelphia 18, Pa. Bulletin, "Milton Roy Pumps," No. 484. Gives special attention to a capacity-pressure chart as a simplified form of pump selection chart.

Office of Technical Services, Dept. of Commerce, Washington 25, D. C. Report, "Industrial Project on Statistical Quality Control," PB-88842. Results of a research project sponsored by OTS in cooperation with the Syracuse Chapter of the American Society for Quality Control, Syracuse, N. Y.

Shipping Container Institute, 475 Fifth avenue, New York 17, N. Y. Booklet, "OK On Delivery." A presentation of the principal damage causes that shippers are in the best position to correct. Explains how they can go about it.

Swenson Evaporator Co., Div. of Whiting Corp., Harvey, Ill. Booklet, "Recovery Equipment for Pulp Mills." Features the application of various Swenson products to the recovery problems of pulp mills, such as pulp washers, evaporators, mud filters, spray dryers, etc. Contains flow sheets and photographs of actual installations.

Warren Steam Pump Co., Inc., Warren, Mass. Bulletin, "Warren Liquor Pumps." Illustrates and describes Types "L", "LS" and "A" Liquor Pumps for process industries.

Weyerhaeuser Timber Co., Longview, Wash. Book, "Boss Logger", by Richard Thruelsen. The story of "Men At Work," reprinted by special permission of "The Saturday Evening Post."

Over 90% of the pulp mills built have installed Dorr Continuous Recausticizing

WITHIN THE PAST TEN YEARS . . . the most active period in the history of kraft pulp production . . . over 90% of the new pulp mills built have installed the Dorr Continuous Recausticizing System. Of those installing other equipment during this period, approximately half have since converted to Dorr.

To pulp producers, these figures are of no direct importance in themselves. They are significant only because they emphasize the practicability of Dorr techniques and equipment, and recognition of our constant efforts to improve recausticizing practice. Indirectly, they are also indicative of the economic benefits obtained by users of the Dorr System.

We would welcome the opportunity to explain in detail the operating and economic advantages to be derived from Dorr Continuous Recausticizing.

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122 E. 42nd ST., NEW YORK 17, N. Y. Edited By R. G. MACDONALD, Secretary

Testing Printability of Paper With Ink–II*

By Otto P. Berberich[1], Louis F. Engelhart[1], and Milton Zucker[1]

Abstract

The method by which a No. 4 Vandercook test press is set up and used for determining the printing qualities of paper is described.

Studies on the relationship of printing ink and paper from the point of view of printability, started in the Products Development Laboratory in Chicago and reported by Fred A. Weymouth at the TAPPI meeting in February, 1942, have been continued. *(1)*. It is known that the method has been adopted at a number of paper mills; and it is believed that these mills, and others, will be interested in the findings.

In the five years that have intervened since that report, two important developments have occurred which have prompted modifications in the procedure originally recommended by Weymouth. The first development is the speeding up of presses, in particular, high speed web presses for publication printing. This has prompted the authors to suggest a change in the method of observing Weymouth's degree of offset, which they call "setting speed." The second development has been the widespread experimentation with new binders in coated papers which has resulted in the production of papers whose resistance to picking cannot be predicted by the Dennison Wax Test—this has prompted the suggestion of a new routine test for measuring the comparative pick point of papers and several procedures for research and development work.

In order to present the complete procedure the authors have of necessity incorporated much of what was presented in the 1942 paper. The discussion will follow that paper with additions or deletions.

The Press

An engraver's proofpress such as a No. 4 Vandercook or Hacker test press is used for press testing.

The proof press was provided with an extension of the bed, and at type height, a flat solid bed plate was mounted on the extension, on which a piece of paper can be laid; this extension is intended for the "setting speed" test. Fig 1 shows a No. 4 Vandercook proving press with such an extension.

The proof press should preferably be provided with a split distributing system so that different inks can be compared on the same paper; this is not essential for routine paper testing, but is highly desirable for experimental work. In this case exact duplicate plates are essential for accurate results.

The Rollers

Glue coated rollers are recommended for best printing and for use with most heat-drying inks which involve the factor of solvent absorption into the rollers. However, it is suggested that a spare set of rollers of synthetic rubber composition be available for possible tests involving the use of steam-or moisture-setting inks.

Rollers covered with a thin glue glycerine coating to 2½ inches diameter are preferred if the Vandercook No. 4 is used. All rollers should be checked after coating to be sure that the rollers are of proper circumference throughout their entire length. Solid glue rollers are not recommended because they rapidly go out of round. Synthetic rubber or rubber rollers are not recommended for general use because if heat-drying inks are to be tested they involve the factor of solvent absorption into the rollers; they should, however, be substituted if printability tests are to be run with moisture-setting inks. The setting of the rollers on the Vandercook is a simple operation and consists of raising or lowering inked rollers by set screws until a mark is made of proper width on the roller gage provided by the press manufacturer.

The Plate

The printing plates must be chosen very carefully so that the human element will be eliminated during the course of testing. Plates mounted on wood blocks are not recommended. Patent base is satisfactory provided the plates mounted on the base are of uniform caliper throughout. Plates of 0.154-inch thickness are used and the engraver submits plates with proofs which are printed with a small amount of ink and light impression. This shows up the low spots (if there should be any) after these precautions. A solid plate 4 inches by 6 inches is ample for making any of these tests to be later described. It has been found convenient to pick such plate sizes as will satisfactorily fit on to 8½ by 11 inch sheet sizes; exhibits or prints of these dimensions readily fit in with letter-sized reports and filing cabinets.

In the halftone printing testing to be described, halftone plates are similarly prepared (0.154 inch thick). The screen work has been dropped slightly below any solid areas by the engraver. The purpose of the prepa-

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Hotel Commodore, New York, N. Y., Feb. 23-26, 1948.

[1] Research Laboratories, International Printing Ink Div., Interchemical Corp., New York, N. Y.

ration is to eliminate all makeready and "spotting up" of low areas in the plates by inexperienced operators.

Case, the pioneer in this work, used a solid steel plate (0.918 inch thick) which had been chromium coated so that its surface was optically smooth. The importance of correct plate height cannot be over emphasized, indeed it is an absolute essential for accurate testing.

With a patent base 0.759 inch in height, the 0.154 inch plate is underlayed with 0.005 inch of packing. This builds up the plate height to the 0.918 inch required. A micrometer is always used to check plate heights and packing.

Applying the Ink to the Rollers

One of the variables in applying ink to rollers in the past experiments has been that the specific gravity of ink has not been carefully regarded. All printing is performed by volume (film thickness) and in the making of laboratory prints it is necessary to see that any given volume of ink is evenly applied to the rollers in spite of the large amount of vibration on the Vandercook No. 4 press. If the ink is evenly applied, the same film thickness of ink is transferred to both sides of the plate. One of the common methods is to weigh off a quantity of ink for each test. However, when shifts are made to other inks, there is introduced the factor of specific gravity. One of our laboratories has developed a simple instrument, which is called an "Ink Volumeter," which allows a given amount of ink to be applied for each notch of the ratchet. This instrument is accurate from one test to another within a variation of 3%. This has been ascertained by actually checking the ink weights on a balance. The application of ink to the rollers with this instrument is much easier than with an ink spatula and the ink can be applied more rapidly and evenly.

Figure 2 shows this instrument. The ink is applied with a spatula into the depression formed by retracting the plunger several notches; if more ink than two or three notches is applied, several retractions are made, so that only a few notches are applied at a time. When the desired volume of ink is in the applicator, the top is wiped flush with a spatula, and the ink is ready to apply to the rollers of the press, by pushing the plunger.

A notch on this instrument is equal to ¼ cc.

Preparation of the Paper Samples

After all of the foregoing tools are in order, the actual testing is a simple operation. Strips of the paper to be tested and the standard sample are cut approximately 2½ inches by 10 inches. The sample to be tested is underlayed with that of the standard and vice versa and the pairs are then placed side by side and attached to a third piece of paper with scotch tape or staples at one end, taking care that both wire and felt sides are kept in comparable positions. One to four samples are prepared depending upon what information is desired as described under Procedure.

Printability Tests Using a Solid Plate

Thus far printability testing has been described under the following controlled conditions: (a) A precision press such as the Vandercook No. 4, (b) glue glycerine coated rollers for accuracy, (c) the use of patent base in preference to wood blocks, (d) carefully chosen plates made with the greatest accuracy of solid steel chromium coated plates, (e) the application of the ink in controlled amounts, and (f) preparation of the paper samples.

The impression cylinder of the Vandercook is undercut 0.040 inch. Sufficient packing must be applied to the cylinder to bring the packing and the samples to be printed to a total thickness of 0.042 inches; this gives 0.002 inch pressure over the impression cylinder bearer. This means there is now 0.002 printing pressure on the impression cylinder. The plate bearer height is 0.918 inches and the plate and its packing is 0.920 inches high. This gives 0.002 printing pressure over the plate bearer. During printing, the two bearers are intimately in contact giving an overall printing pressure of 0.004 inches. If any more packing is needed, one half is placed on the cylinder and the other half is placed under the pressplate. If a patent base is used, the base is merely lifted and the packing placed underneath the base. The press is now ready for operation. From 2 to 3 cubic centimeters (8 to 12 notches) of ink is used in the case of *solid* vibrator distribution or *one* ink testing. Naturally, half this amount of ink is used on either side of the *split* vibrator in case of simultaneous *two* ink usage or testing. When using a single ink the plate is placed in the middle of the press rather than to either side and in a position at least 2 inches from the dead line. When using two inks or the split vibrator the plates are mounted "two-up"—again 2 inches from the dead line and centered close as possible in the bed as the split distribution will allow, and to fit an 8½ x 11 inch sheet or sample backing. The solid plate is inked by double rolling and one print is pulled on a good grade of enamel paper and this first print is then discarded. The reason for this operation is that it takes away the factor of a double rolled plate. The test sample and standard which has been previously prepared is then placed in the press and printed.

Printability Tests Using Halftone Plates

Rather than depending on a solid plate alone, our laboratories have always used plates which are varied depending on the object of the tests. An excellent plate

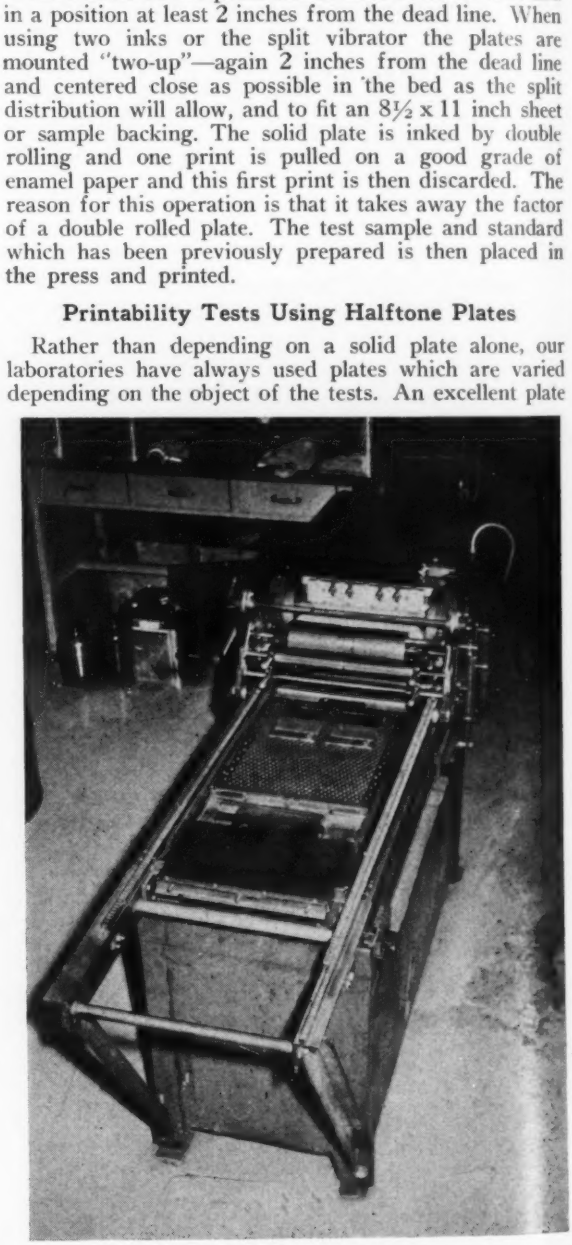

FIG. 1

for routine testing carries about one third solid (generally with some simple reverse type matter), a band at about three-quarters tone, a band at about one-quarter tone, and a small section with type; this permits observation of printability of halftones while carrying enough ink to print a solid. Other plates used carry graduated halftone bands from 10% to 100% coverage, in 10% gradations; solids with halftone pictures are also used on occasion.

INKS

The ink used for testing should be chosen with some care, and should depend on what the testing is intended to establish. For routine testing of mill runs of paper against a standard, any ink which has been satisfactory in production printing of the paper will do. For experimental evaluation of paper the inks should be selected with the eventual printed job in mind.

PROCEDURE

When the printing is done, the following observations can be made:

Ease of Impression or Coverage (Printability). The prints are compared visually. In the case of solids, the lay of the ink on the sheet is observed—the evenness of coverage and any mottling (at heavier ink coverage). If desired, varying amounts of ink are used to determine whether the papers lose coverage at the same ink volume.

For halftones, the sharpness of the printing, at the point where coverage is obtained in the solids, is observed.

Blottability (Receptivity). After a printing impression has been made on the test samples using a moderate film of ink, the press rollers are raised at the end of the printing stroke. This prevents the reinking of the printing plate which forms an important part of this study. A permanent record is then made by pulling an impression with the rollers raised on another piece of paper which records the quantity of ink left on the plate by the paper. This test shows the ability of both samples to clean the ink from the plate.

Evenness and Rapidity of Ink Absorption. Observation of the evenness and rapidity of ink absorption into the sheet allows the hard spots of the paper and evenness of ink absorption to be directly compared.

Degree of Offset (Speed of Absorption). This test is described by Weymouth as follows:

By applying a moderate quantity of ink and quickly laying a sheet of paper over the freshly printed specimen and then again feeding these through the press, the tendency to offset of one sample versus another is readily determined.

While this procedure is adequate for many forms of printing, it does not give accurate predictions of what will happen on a high speed printing press where the web is moving rapidly, and the back-up of the printed sheet occurs in a matter of a second or so, while successive impressions in multicolor printing are almost instantaneous. It has been observed that many papers which show equal setting at a 15 to 30 second time interval (necessary where the paper must be refed through the press) show different rates of setting in a few seconds.

Modification of Speed of Absorption Test. A No. 4 Vandercook test press has been set up so that a proof can be printed, and *without removing* the proof from the grippers, a back-up test can be made at the opposite end of the press, where a clean sheet of a standard stock has been placed over a solid plate the width of the bed and is type high (see Fig. 1). With this means of testing, it is possible to test the "Degree of Offset" or "Speed of Absorption of Ink by Paper" a split second after printing. By feeding the test sample and standard paper prepared as in the paragraph on "Preparation of the Paper Samples" previously outlined, the tendency to offset of one sample versus another is readily determined. It is quite obvious that the paper which tends to give the least offset is the faster ink absorbing paper. Should the test sample show considerably different ink receptivity as compared to the standard, it is necessary to resort to the double printing plates and split divider, because as all know, the printer controls the ink film thickness by the density of tone. Film thickness has a great influence on the speed of absorption of ink by paper. It must then be determined what volumes of ink are required to obtain equal density of tone on the two papers. The papers are then printed with this volume, as above, and the observation is made.

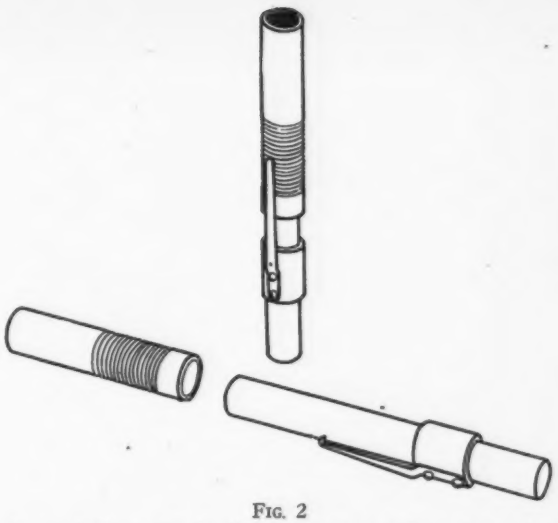

FIG. 2

Figure 3 shows some comparisons which will illustrate the point—the captions are self-explanatory.

Relative Show-through and Strike-through. Should thin papers be involved and a large quantity of ink used on the sheet, the qualities of show-through and strike-through can be directly compared.

Drying speed. If desired, the effect of the paper on the drying speed of the ink can be observed by making several comparative proofs, and testing the films at intervals. For heat drying inks, the proofs can be heated; for ordinary linseed oil inks, the proofs should be put at the bottom of a pile of 500 sheets, or subjected to equivalent pressure in a telephone book.

Pick test. As pointed out above, many of the experimental coatings recently produced by the mills contain binders which render the Dennison Wax Test unreliable. As an illustration, a lot of paper was recently tested with a Dennison Pick Test under 2, which the producer feared was unprintable; the press pick tests indicated that the paper was satisfactory, and it was used in the normal course of trade without incident.

The pick test is made on the press by successively printing the paper with inks of progressively increasing tack. The method is *strictly comparative* rather than absolute since the film thickness of the ink, the temperature of the ink (which can be varied by the time allowed for distribution), the humidity, the type of plate and the speed of pulling the proof all influence the picking. A satisfactory routine test is as follows:

The test paper and samples are prepared as in the paragraph on "Preparation of the Paper Samples" so as to give the proper impressional squeeze and sufficient margins around the transfers to be made from the

two-up selected solid screen plates.

In cases of control tests, only one of the tack-graded inks may suffice provided the control specifications are such that the lot is to be judged satisfactory if it doesn't pick with the ink of given tack under the printing test conditions.

However, if one or several samples of completely unknown pick are to be tested, their approximate pick range can be established by simple and quick finger tap-out tests with the graded inks.

Then one side of the split roller press is inked with the lowest limit viscosity ink, and the other with an *equal volume* of the ink of highest tack limit. Equal volumes (as by volumeter) are taken for this and all subsequent tests of the series, as film thickness is a very important factor in its influence upon pick and should be held constant for comparable pick. The ink volume, and consequent printing film thickness, selected may vary from one widely divergent class of papers to another (as from news to coated) and upon the nature of the test plates used, but the idea is to select such a quantity as will give unbroken coverage in the solids and no fill-in of the screens.

To do this a somewhat thicker film may have to be used than that used by the normal printer, for tackier inks must be used as it is desired to pick—something the printer wishes to avoid. It has been found that 1.5 cc. of ink, on each split-roller side, usually suffices.

Having inked and uniformly distributed the two inks, pull about a half dozen proofs using as uniform as possible impressional speed. The ink pull resistance, and consequent pick, will vary as the impressional speed—hence, the caution. It has been found that a peripheral speed of either 2 feet or 3 feet per second is easy for the operator to acquire and maintain. Whichever selected, may depend upon the gripper tension, as with some presses the higher speed may tend to pull the sheet from the grippers when using the higher tacked inks.

Stop-watching the operator's passage of the impression cylinder along marked lengths of the press bed, will easily establish the desired impressional speed; then this is to be maintained in all subsequent tests.

As the proofs are pulled, it is advisable to consecutively number them if the inks are close to, or at, the pick point—for if many are pulled without re-inking, a gradual diminution of the ink may be noted indicating diminishing film thickness and consequent variable effect on pick. Pick ratings or judgments made on the similar numbered proofs will then give most accurate comparisons.

If periodic ink replenishment is picked as an alternate to periodic roller wash-ups, it is to be remembered the ink consumption usually ranges from 2 to 3 milligrams for each square inch of *solid* printed.

For obvious reasons, the graded inks are so formulated as to give no change in consistency while on the press during normal test periods.

The viscosities or relative tacks of the graded inks are expressed in poises as determined at speeds of 200 r.p.m. on the Interchemical Rotational Viscometer which Henry Green *(2)* has described in detail in the literature, or in Inkometer terms of tack *(3)*.

In his work in developing a Tackmeter, Green *(4)* likewise defined, and rheologically established, tack as the pull-resistance exerted by an ink film adhering between two surfaces (as plate and paper) that are separating at a definite rate and with a known area of contact and known initial film thickness. He found that,

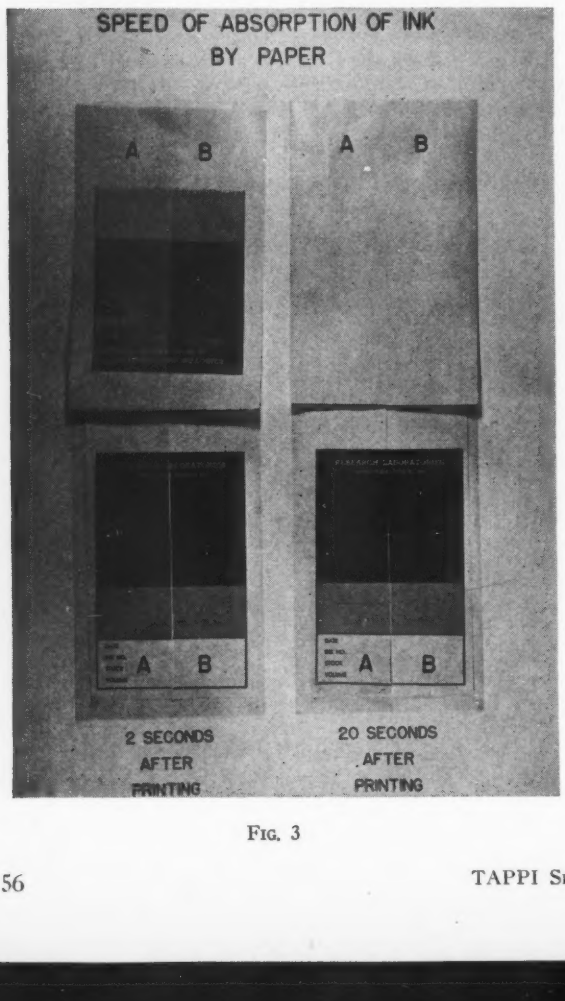

FIG. 3

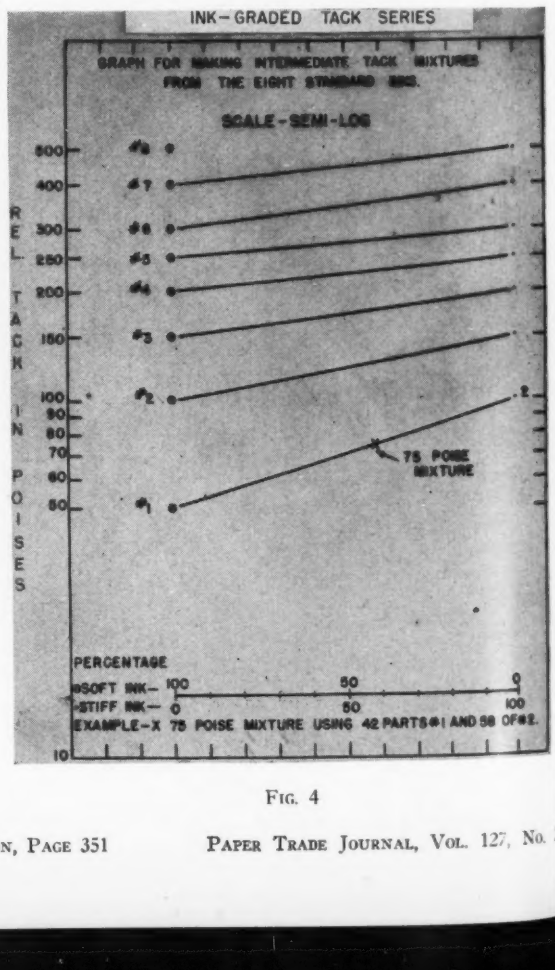

FIG. 4

at the rates of shear or film plitting on the printing press, that the dominant ink consistency factor governing this tack or pull-resistance was the ink's plastic viscosity, and that its yield value was negligible.

The authors have confirmed this, and in their test express this force or pull-resistance tending to pick paper in terms of relative ink viscosity or tack and endeavor to vary this until it just picks our test stocks keeping all other aforementioned influencing variables as constant as possible. Under these conditions, they consider the tests a practical adjunct to present pick tests.

The graded inks used are black inks (for maximum contrast) and are identified as follows:

Ink No. 1. 50 poise* Rel Tack (approximate Reed Inkometer tack at 400 r.p.m.)	7.0
Ink No. 2. 100 poise* Rel Tack (approximate Reed Inkometer tack at 400 r.p.m.)	15.0
Ink No. 3. 150 poise* Rel. Tack (approximate Reed Inkometer tack at 400 r.p.m.)	20.0
Ink No. 4. 200 poise* Rel. Tack (approximate Reed Inkometer tack at 400 r.p.m.)	25.0
Ink No. 5. 250 poise* Rel Tack (approximate Reed Inkometer tack at 400 r.p.m.)	30.0
Ink No. 6. 300 poise* Rel Tack (approximate Reed Inkometer tack at 400 r.p.m.)	35.0
Ink No. 7. 400 poise* Rel Tack (approximate Reed Inkometer tack at 400 r.p.m.)	45.0
Ink No. 8. 500 poise* Rel. Tack	

*IC Viscometer 200 r.p.m.

Figure 4 shows how they may be mixed to obtain any desired degree of tack.

The Chicago laboratory prefers to use a set of three yellow process inks, since picking is most often encountered with the first down yellow in 4-color printing. The softest of the three inks is of 125 poise relative tack (Inkometer 18)—it is shaded green, and represents a very thin commercial body. The intermediate ink, shaded to the red, is of 200 poise relative tack (Inkometer 23), while the heaviest ink, of normal color, is of 275 poise relative tack (Inkometer 30) and represents the heaviest normal commercial body.

The procedure used and recommended by the Chicago factory and laboratory is as follows:

1. Use a solid printing plate $1\frac{1}{2} \times 12$ inches and the solid vibrator. Mount the plate crosswise in the press, close to the head, so that the paper will be printed close to but a reasonable distance from the grippers.

2. Apply ten volumeter notches ($2\frac{1}{2}$ cc.) of the soft yellow evenly across the vibrator and allow to distribute.

3. Ink the plate completely by rolling across at least four passes back and forth.

4. Trip the inking rollers. This is to decrease resistance so that a higher printing speed is permissible by manual operation.

Print the paper samples (previously prepared) with the maximum speed possible. The cylinder can literally be "snapped" around.

5. If the paper shows the proper indications of comparative picking, make these notations.

If the paper does not show picking on any of the samples, comparative strength can obviously not be made and the next heavier inks must be considered.

Sludge Contact Reactors In White and Waste Water Treatment

By V. J. Calise[1]

Abstract

Pulp and paper mills are becoming increasingly interested in white and waste water treatment by means of sludge-contact reactors in order to recover and reuse the clarified water, recover and reuse the concentrated fiber and stock, avoid polluting streams and public water supplies, and simplify plant flow sheets and designs.

In the sludge-contact reactor, the suspended solids recovered from the white or waste water are maintained as a deep dense bed of sludge through which the incoming, chemically treated, white or waste water is passed. The suspended sludge has the remarkable property of catching and separating the solids in the incoming white water, producing an effluent of great clarity. It is shown that the results obtained with the sludge contact white water reactor are far superior to those of conventional clarifying units. In the sludge contact reactor, concentrated, suspended solids are drawn off from an external concentrator or an integral concentrator at a rate equal to the incoming rate in order to provide a uniform depth of sludge in the reactor. Chemicals are automatically and continuously fed to provide optimum coagulation conditions. The use of properly designed concentrator assures the maximum concentration of fiber or solids content as well as the highest degree of clarity of treated water from the reactor. Recovery of fiber and solids as high as 97% is accomplished by means of this arrangement with maximum ease of operation. Operating flow sheet and design data are given for a large white water sludge contact reactor installation.

The phenomenal expansion of production in the pulp and paper industry in the last few years has created many problems dealing with the maintenance of manufacturing facilities and supply of process materials. One of the raw materials used in great bulk in the industry is water. An adequate supply of properly-treated, clear water is necessary for almost all pulp and paper mill operations. The usual methods of water treatment such as coagulation, flocculation and sedimentation, lime soda or zeolite softening, and filtration have been employed with success in making all kinds of raw water supplies useful for plant operations.

However, in recent years, there has been a tremendous amount of interest by manufacturers in methods of treat-

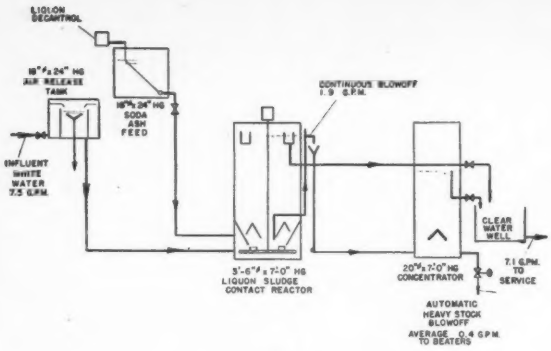

FIG. 1
Liquon Pilot Plant Sludge Contact Reactor

ment of white and waste waters from pulp and paper mill operations. There are a number of compelling reasons for this increased interest in waste and white water problems.

Recovery and Reuse of Clarified Water

NEED FOR RECOVERED CLARIFIED WATER

First of all, many mills are confronted with critical water shortages and high water costs. In some cases, the shortages have interfered with mill expansion and, in others, have actually curtailed plant production.

Many mills depend upon well or ground water supplies and as the mill expands operations, the available well water capacity frequently becomes inadequate because of a falling water table in the ground.

Where surface supplies are used, river flows become reduced and levels in lakes, ponds, and reservoirs recede alarmingly during periods of reduced rainfall.

These conditions have naturally led mill operators to decrease the intake of raw water into the mill by treating, recovering, and reusing as much of the white and waste waters as is possible. The amount of recovery attainable in each mill varies in accordance with practical and economical considerations imposed by plant manufacturing procedures and flow sheets. However, water recoveries of greater than 90% can be achieved with sludge contact reactor equipment. Greater percentages of recovery, although possible with the reactor, are not often practical because of the necessity for blowdown from the system in order to prevent dissolved solids buildup. The blowdown may constitute as much as 10% of the total flow in the system in some cases.

QUALITY OF REACTOR CLARIFIED WATER

The recovered or clarified effluent from a sludge contact reactor usually contains a suspended solids or fiber concentration that is low enough to prevent clogging in shower nozzles and to be used in other plant operations. Many field tests have demonstrated that the effluent from a reactor never exceeds 0.3 pounds of fiber per 1000 gallons under normal operating conditions. Where substantial quantities of inorganic filler, such as clay or calcium carbonate, are present, coagulants must be used to produce a clear effluent. In these cases, the amount of filler remaining in the clarified effluent from the reactor depends upon the type of filler and coagulant used but the filler concentration usually is less than 0.4 pounds per 1000 gallons. Alum is the coagulant used in most cases although, in many instances, there is sufficient alum present in the white water itself to avoid the use of a coagulant feed.

The recovered or clarified effluent from a reactor is often more valuable than fresh water for two reasons:

1. The alum present in this water reduces or eliminates the need for additional alum used in sizing, and
2. The white or waste water usually is 20 to 40°F. higher in temperature than the fresh water. Thus, there is a considerable savings in recovered heat.

In general, therefore, the recovery and reuse of water by itself is not only desirable but also profitable. Usually, in addition, there are other advanatges as shown below.

Recovery and Reuse of Concentrated Fiber and Stock

STOCK LOSSES IN PAPER MILLS

The amount of stock comprising both fiber and filler which is discharged and lost in waste waters from pulp and paper mills, is quite high. In Table I are shown the concentrations of stock in white and waste waters from four mills. In some large paper mills, as much as 6 tons and as high as 50 tons of stock, on a dry basis, are lost per day.

The reason for this loss lies in the inability of the fourdrinier wire or any wire used in "savealls" or other machines, to effect a complete separation of suspended solids from water. Also, because fiber is held more readily by the wire than filler, the relative ratio of fiber: filler is greater in the white water than in the

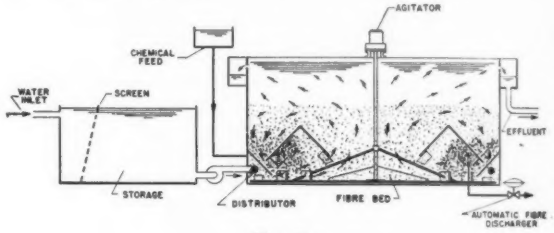

FIG. 2
Sludge Contact Reactor

original mixture introduced on the fourdrinier. Thus, if the fourdrinier receives a mixture containing 80% fiber and 20% filler, the recovered solids from the mill waste water may contain only 10 to 20% fiber and 80 or 90% filler. Of course, when products are being made which contain no filler, the recovered solids contain mostly fiber with a low ash content.

The value of the filler in recovered stock obtainable from a sludge contact reactor is often overlooked. Filler must be purchased or manufactured in the mill from purchased materials. The range of cost for such fillers is $12 to $40 per ton. Filler waste may be as high as 20 tons per day in some large mills and this represents a considerable loss. To this must be added the fiber loss which is also considerable. The loss of fiber can vary from as little as 1 ton to more than 10 tons per day with the larger mills. With prices of pulp varying from 30-$200 per ton, this loss of fiber is a considerable drain and expense.

RECOVERED STOCK YIELDS

The sludge contact reactor type of equipment recovers both fiber and filler in very high yield. For example, in a plant where the influent suspended solids concentration from the reactor contains a maximum of 0.2 pounds per in the white water entering the sludge contact reactor is 4.0 pounds per 1000 gallons and the clarified effluent from the reactor contains a maximum of 0.2 pounds per 1000 gallons (recovery 3.8 pounds per 1000 gallons), and with a concentrated stock from the reactor concentrator of 1.0% (83 pounds per 1000 gallons) then the amounts of stock and water which can be recovered from each 1,000,000 gallons of white water are:

$$\frac{(1{,}000{,}000)\ 3.8}{1000} = 3800 \text{ lb. of stock recovered}$$

$$\text{or } \frac{(3800)\ (1000)}{83} = 46{,}000 \text{ gal. of 1.0\% sludge}$$

$$\text{and } 1{,}000{,}000 - 46{,}000 = 954{,}000 \text{ gal. of usable process water recovered, containing a maximum of 0.2 lbs. stock per 1000 gallons.}$$

Density of Recovered Stock

In many plants, it is important to obtain the proper density of recovered stock from the reactor in order to make full use of it in process.

The density of the stock discharged from the sludge contact reactor concentrator depends upon the following factors:

1. Concentrator design and construction, i. e., external concentrator (Fig. 3) or integral reactor concentrator (Fig. 2).

2. Ratio of filler: fiber. The higher the proportion of filler the greater the density of concentrated stock. Concentrated stock can vary from 1 to 7% in concentration depending upon this ratio and other factors.

3. Proper chemical feeding and correct chemical dosages for optimum coagulation. Although the reactor can be operated without chemical coagulants or coagulant aids when fiber alone is present in the white or waste water, the proper dosage of chemical will assist in obtaining a more dense stock concentration and a superior effluent quality. Relatively small amounts of chemical are usually required so that the chemical operating cost is very low, in any case.

By proper design of reactor concentrator and feeding chemicals for optimum coagulation conditions, virtually any desired stock density can be obtained.

Pilot Plant Investigations

In general, the proper design of equipment and choice of chemical treatment for a given waste or white water can only be made after coagulation jar tests are run on the spot with the waste water in question. In these small scale laboratory tests, pH, coagulant dosage, and type of coagulant can be varied and optimum conditions found.

In some cases, after jar tests are made, it is desirable to install a pilot plant and investigate the operating and coagulating characteristics of the white water on a pilot scale. The data obtained from the pilot plant investigation can then be used to design and construct the large installation. Figure 1 shows a pilot plant Liquon sludge contact reactor installation which was recently operated at a large paper mill. Approximately 7.5 g.p.m. of white water containing an average influent stock concentration of 6 pound per 1000 gallons, was treated in this unit. Approximately 25% of the incoming flow or 1.9 g.p.m. was blown off continuously to an external concentrator and further concentrated. The average stock concentration of the effluent from the reactor which entered the external concentrator was 23 pound per 1000 gallons. The average stock concentration from the external concentrator was approximately 100 pound per 1000 gallons or an overall stock concentration of approximately 17 times. The clarified effluent from the reactor and external concentrator contained an average of 0.3 pounds of stock per 1000 gallons and the average per cent removal of fiber was 95%. Approximately 2 grains per gallons of soda ash was fed to help coagulate the stock. Chlorination was not found necessary in these tests. The average clarified effluent water temperature was approximately 80°F. while the fresh raw water temperature was approximately 45°F. or a saving of 35 b.t.u. per pound of water recovered. An interesting feature of operation with this pilot plant was the fact that the influent to the reactor varied from 4 up to 13 pounds of stock per 1000 gallons during the period of test and no "saveall" screen was present between the wire and the reactor. The bed of sludge in the reactor had a fly wheel effect on these different concentrations of stock and the clarified effluent quality was virtually unaffected.

Unusable Recovered Solids

In other cases, there are waste waters which are expensive to coagulate and which yield recovered solids which cannot be reused. Wash waters from deinking

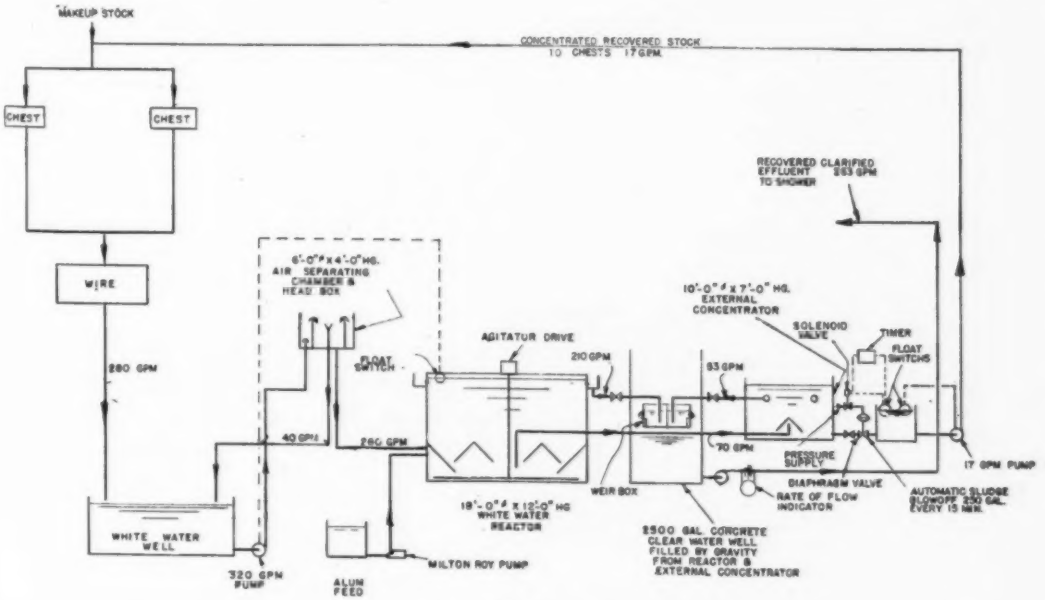

Fig. 3

Flow Diagram for Liquon Sludge Contact Reactor Installation.

processes having a high pH value usually contain a high amount of colloidal organic matter. These waters may require high coagulant dosages.

Sometimes, these highly colloidal waters can be diluted with other waste waters available in the plant in order to reduce the coagulant dosage to a fraction of that required on the undiluted waters. A complete study of all mill waste waters is required for this purpose.

Where recovered solids cannot be reused, then a problem is presented in disposing of these materals. After further concentration by centrifuging or drying, these solids can be handled in one of several ways: (1) sold to other mills or processors, if possible; (2) burned; or (3) dumped in disposal pits or lagoons.

Avoidance of Pollution of Streams and Other Water Supplies

The seriousness of the problem of stream pollution is apparent to all the pulp and paper mill owners and a great deal of work is being done by the National Council for Stream Improvement on this problem. Not only the pulp and paper industry but virtually all industries that have appreciable amounts of waste waters are confronted with the problem of treating their waste waters so as to conform to regulations of the state Board of Health.

Many industries are now treating waste waters without being able to recover any reusable materials from the wastes. This is not true of the pulp and paper industry where waste water treatment can be profitable.

The sludge contact reactor can be used to treat the white and waste waters from the pulp and paper mills and to recover valuable stock as well as reusable water. Operating costs for such treatment are very low and the recovered water and stock are usually worth many times the cost of treatment.

The clarified effluent from the sludge contact reactor has very low suspended solids, usually less than 0.2 pounds per 1000 gallons, which assures the introduction of virtualy and insignificant amounts of polluting material into streams.

Sludge Contact Reactor Design and Operation

Conventional Saveall Designs

Although white and waste waters from paper mills have been treated for some time in "savealls," these devices do not clearly separate the fibers or fillers from the water. These devices are usually classified by the methods used in separation: (1) screening, (2) settling, and (3) flotation.

With these "savealls," the separation of the fibrous solids from the water is accomplished mechanically either by retaining the fiber on a fine mesh wire screen or by using large tanks so that the velocity of flow is so small that the fibers settle by gravity to the bottom, or by adding reagents which float the fibers to the top. Once the fiber or stock is separated, it is withdrawn from the scene of action and no longer plays any part in the treatment of the waste water.

The effluent from these conventional "savealls", may still contain as high as 2 to 3 pounds of stock per 1000 gallons under optimum operating conditions and is unacceptable for general plant use or for showers where 1/64 to 1/16 inch nozzles are employed. For this reason, reactors are finding increasing application where high clarity effluents are required for general use, for showers, for blowoff into streams and where high yields of stock must be recovered.

Sludge Contact Reactor

The sludge contact reactor makes use of a simple principle which has been employed successfully for many years in the water conditioning field.

The principle of operation of the Liquon sludge contact reactor, shown in Fig. 2, is to maintain a depth of previously accumulated, suspended solids with which to contact the incoming white or waste water and chemicals. The intimate contact of incoming water and chemical with the suspended solids, filters out and more effectively coagulates the stock and produces an effluent of superiar quality while effectively concentrating the stock particles in the body of the suspended depth of solids. The remarkable effect of contact with sludge results in removal of more than 95% of incoming solids. Recovery of solids or stock by conventional "saveall" or by ordinary coagulation and settling without contact with previously accumulated sludge results in recovery of only 40 to 60% of incoming solids.

As shown in Fig. 2, an agitator is provided to furnish controlled and gentle mixing as an aid in floc formation and also to maintain a uniform concentration of sludge throughout the depth of suspended solids. The agitator also prevents any accumulations of stock on the floor of the tank.

Mixing of the sludge, incoming waste water, and chemicals takes place at the periphery of the tank where the top speed and velocities are greatest. An inclined deflector baffle forces the mixture of water, chemicals, and sludge to the floor of the tank and towards the center, away from the effluent collector.

Baffles cover a substantial portion of the area of the unit thereby providing a good separation of the clarifying from the mixing zone. Stilling stators are provided throughout the cross section to still the rotational effect of the effluent from the mixing zone. A separate port is provided for the return of the finer particles to the mixing zone. The agitator blades push the water towards the center of the tank in the mixing zone. The mixed water and sludge then rise through the central port into the clarifying zone where they flow radially toward the effluent collector. The inner sludge particlesthen separate from the water because the velocity decreases with radial flow and the finer sludge particles return through the peripheral port into the mixing zones. Thus, the particles form a suspended blanket of stock through which all of the water passes. The sludge blanket is usually 7 to 8 feet deep and provides an effective sludge contact or filtering action.

A raw water distributor with orifices is provided below the deflector baffle to distribute the incoming water around the periphery of the tank.

The area of the clarifying zone is the full area of the unit and, therefore, the lowest possible velocity is provided for separation of the water from the sludge. Conservative flow ratings gallons per minute per square foot of top area are used, depending on the results of jar and pilot plant tests.

In Fig. 2, the sludge contact reactor is shown with integral concentrator which is the design used on all water coagulation and softening applications with this unit. As stated previously, and as shown in Fig. 3, an external concentrator is used for some white water applications where greater stock concentrations are desired. Thus, by means of this external concentrator, any desired stock density can be obtained.

With an integral concentrator, an automatic solenoid-operated desludging valve, actuated from an influent flow meter, is used to blow off the accumulated solids as formed in the "dead" concentrator pocket and thus maintain a constant depth of sludge. With an external concentrator, a constant sludge blowoff from the middle

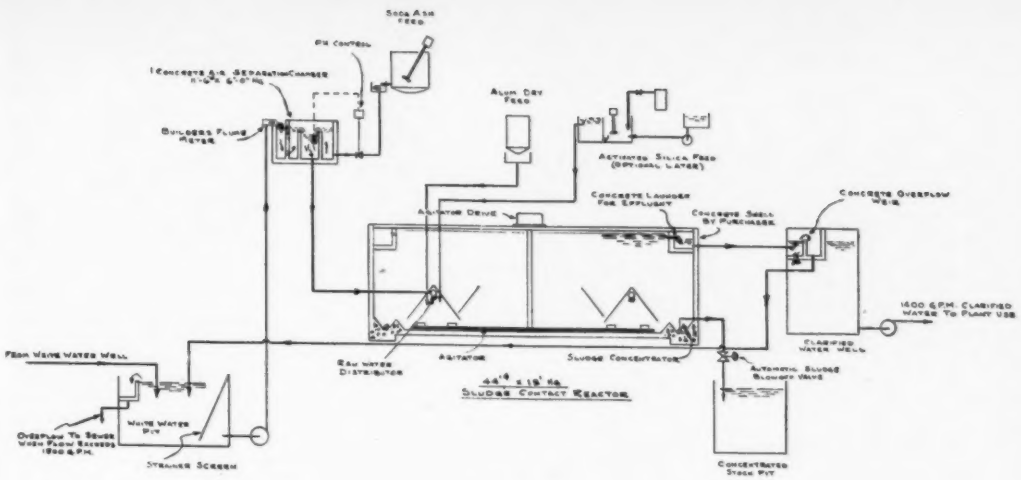

Fig. 4
Liquon White Water Reactor for Chesapeake Paperboard Co., Baltimore, Md.

of the sludge bed into the external concentrator is maintained. The concentrated solids are blown off intermittently or continously from the external concentrator into the beaters or head chests by means of the automatic, solenoid-operated, desludging valve actuated by a timer operating from the inlet flow meter.

In order to provide proper chemical control and to insure optimum results, the coagulant chemicals can be fed from a proportionating pump or a decanting swing pipe feeder comprising a totally-enclosed, motor-operated, gear reduction unit of special design, such as the Liquon Decantrol. One end of the chain wound around the feeding sprocket of this chemical feeding device is connected to the draw-off head of a decanting or swing pipe. During operation of the feed, the chemical tank is filled with the chemical solution or suspension and the feeding sprocket rotates, slowly lowering the chain and the end of the swing pipe below the liquid level and thus feeding chemical solution down the swing pipe at an accurate rate. The inlet flow meter is used to actuate the device through a timer. By means of this device, the feeding rate is easily and quickly adjusted.

An air release tank, as shown in Figs. 1 and 3, is usually employed ahead of the reactor wherever air is present in the white or waste water. These air bubbles exert a buoyant action on the particles of stock in the blanket and must be removed to avoid upsetting the sludge bed.

Plant Applications

Figure 3 shows the flow diagram for an installation with external concentrator treating approximately 300 g.p.m. of a white water containing approximately 3 pounds of stock per 1000 gallons. The white water is first screened and then enters a white water well. It is then pumped to an air separating chamber and the overflow goes back to the white water well. From the air separating chamber the white water enters the reactor. The clarified effluent from the reactor enters the clear water well and is about 75% of the incoming flow, while the continous sludge blowoff from the reactor enters an external concentrator and is concentrated further. The clear water from the external concentrator enters the clear water well while the heavy stock blowoff from this concentrator is pumped back to the chests preceding the wire. About 2 grains per gallon of alum are fed at a constant rate into the reactor together with the incoming white water.

Figure 4 shows the flow diagram of a white water reactor design employing an integral concentrator and capable of treating 1500 g.p.m. of a white water containing 3 to 8 pounds of stock per thousand gallons. Alum, soda ash and activated silica are the chemical reagents required for optumiusm operating conditions.

General Operating Cost

Where fiber alone is present in a white water, the stock is concentrated and recovered without the necessity for a chemical coagulant.

When inorganic fillers are also present, the use of a coagulant is advisable. Not more than 3 grains of alum

TABLE I.—STOCK CONCENTRATIONS IN WHITE WATER

Mill	Amount of White Water Discharged, g.p.m.	Range of Solids Concentration, lb./M gal.	Amount of Stock (Fiber and Filler) Lost, lb./hr.	Range of pH of White Water
A	400	3.0-4.5	90	5.5-6.5
B	1400	4-12	500	3.8-5.5
C	2000	2-4	360	5.5-7.0
D	1200	3-6	290	4-7

per 1000 gallons are usually required for this purpore. In some cases, alum is present in the white water and only a slight amount of soda ash is required for coagulation.

Activated silica has been found valuable as a coagulant aid and densifying chemical in some cases. Chlorine is sometimes necessary to avoid slime growths.

Soda ash or lime is sometimes used to adjust the pH of the reactor influent to avoid corrosion of reactor metal surfaces and also to protect pipe lines and other equipment handling the clear water and concentrated stock.

Where chemicals are used, the chemical operating costs is 0.2 to 0.4 cent per 1000 gallons of water treated. Labor and power costs vary but are usually not more than 0.6 cents per 1000 gallons.

Simplicity, ease of operation, and maintenance as well as low operating cost have made the reactor a desirable solution to waste water problems. The high clarity of effluent attainable from this unit which makes possible reuse of this water in plant showers or process, and also, the high concentrations of stock obtainable, assure ever-increasing application for the sludge contact reactor in the pulp and paper industry.

TAPPI Notes

J. Melvin Kernan, formerly of the National Folding Box Co., is now superintendent of the Folding Carton Division, Ohio Boxboard Co., Rittman, Ohio.

Veni Oleskevitch is now assistant manager, Abitibi Power & Paper Corp., Smooth Rock Falls, Ont.

Irwin L. Taylor, formerly of the Institute of Paper Chemistry, is now with the Detroit Sulphite Pulp & Paper Co., Detroit, Mich.

Sidney Hausman, formerly of the Apex Machinery Mfg. Corp., is now a consulting engineer at Westminster, Md.

Paul Easton, formerly of the Hercules Powder Co., is now sales manager, Specialty Products Dept., Bulkley, Dunton Pulp Co., 295 Madison Ave., New York, N. Y.

A. G. Muirhead, formerly of Price Bros. Co., Ltd., is now with Gilles Bros. & Co., Ltd., Braeside, Ont.

John W. Crosson, formerly of the McGraw-Hill Publishing Co., is now sales engineer for the St. Regis Sales Corp., 230 Park Ave., New York, N. Y.

Durward B. Geffken, formerly of the Johns-Manville Corp., is now chemist for the Empire Box Co., Stroudsburg, Pa.

J. Bertram Bates has succeeded Miss Margaret M. Sutton as official representative of the Sun Chemical Co. in TAPPI.

Norman J. Monroe, formerly of the New York State College of Forestry, is now technical director of the Eddy Paper Corp., White Pigeon, Mich.

J. W. Wenger has been transferred from the Camas, Wash., mill to the Port Angeles mill of the Crown-Zellerbach Corp., as technical supervisor.

Mohammed Ekhlas, formerly of the University of Maine, is now with the St. Regis Paper Co., Bucksport, Me.

Bengt Niberger, formerly of the Fernstrom Paper Mills, is now sales engineer for Castle & Overton, 630 Fifth Avenue, New York 20, N. Y.

Joseph E. Atchison, formerly of the John Strange Paper Company, is now in the Pulp and Paper Section, Economic Cooperation Administration, 800 Connecticut Ave., Washington, D. C.

Max M. Kline, formerly of Timefax, Inc., is now research chemist for the Behr-Manning Corporation, Troy, N. Y.

Ivan F. Wieland has succeeded C. H. Davidson as the official representative of A. E. Staley Mfg. Company, Decatur, Ill., in the Technical Association.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership:

W. Gordon Baker, Chief Chemist, Brompton Pulp & Paper Co. Ltd., East Angus, P. Q., Canada, a 1937 graduate of McGill University.

Seward M. Bazler, Chemical Engineer, The Mead Corp., Chillicothe, Ohio, a 1944 graduate of Ohio State University.

Julio DeGouveia, Partner and Sales Manager, R. Belinky & Cia., Sao Paulo, Brazil.

Jean-Yves-Marie Fournier, Managing-Director, Societe Anme des Papeteries de Mauduit, Quimperle (Finisters) France, a 1910 graduate of Ecole Superieure Electricite, Paris.

Frank Hayes, Sales Manager, The Noble & Wood Machine Co., Hoosick Falls, New York.

Edward R. Hoffman, Research Physicist, Hammermill Paper Co., East Lake Road, Erie, Pennsylvania, a 1934 graduate of Pennsylvania State College.

Frank E. Hutton, Executive Sales Department, in charge of pulp mill business, The Babcock & Wilcox Co., New York City, a 1927 graduate of Washington University.

Robert I. Mason, Service Engineer, Hercules Powder Co., Wilmington, Delaware, a 1943 graduate of Massachusetts Institute of Technology.

J. Judson Mealy, Assistant Director, Massachusetts Institute of Technology Station, Eastern Corporation, Bangor, Maine, a 1944 graduate of Brown University.

Arthur J. Melbardis, Engineer, Paper and Industrial Appliances, Inc., New York City, a 1925 graduate of the University of Latvia.

Sidney E. Meyers, Consultant, 146 West 73rd St., New York.

Victor J. Molinski, Student, New York State College of Forestry, Syracuse, New York.

Benjamin E. Natwick, Western Representative, Appleton Wire Works, Inc., Camas, Washington, a 1938 graduate of the University of Washington.

John E. Newman, Sales Engineer, Esso Standard Oil Co., New York City, a 1939 graduate of Holy Cross College.

Samuel Richardson, Control Superintendent, Great Lakes Paper Co. Ltd., Fort William, Ont., Canada, a 1938 graduate of Mount Allison College.

William S. Richardson, 334 Fishers Road, Bryn Mawr, Pennsylvania, a 1947 graduate of Massachusetts Institute of Technology.

Norton L. Speck, 143 West 96th St., New York 25, a 1948 graduate of New York State College of Forestry.

Paul G. Stephan, Technical Director, Alhydro, Inc., Baltimore 1, Maryland, a 1939 graduate of Purdue University.

Wesley N. Stickelman, Student, New York State College of Forestry, Syracuse, New York.

Ruel E. Taylor, Jr., Manufacturers Representative, Boston 16, Massachusetts, a 1934 graduate of Wentworth Institute.

Bennett Leaves Stebbins

Murray H. Bennett of Watertown, N. Y., has announced his resignation from the Stebbins Engineering & Mfg. Co., effective August 1, 1948.

Mr. Bennett is a member of TAPPI and has been connected with the Stebbins organization since 1927 in varying capacities.

He was active as a field supervisor for a period of nine years on installations of linings in the sulphite mills in the United States and Canada. From 1936 to the present time he was serving as sales and development engineer on all applications of acid resisting and process linings and industrial equipment in the middle west and northeastern territory of the United States.

Mr. Bennett was vice-chairman of the Sulphite Pulping Committee of the Superintendents' Association and was formerly an officer of the Empire State Section of TAPPI.